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“Wie das Gestirn,  
Ohne Hast  
Aber ohne Raft,  
Drehe sich jeder  
Um die eigene Laft.“

GOETHE.



TRANSACTIONS OF THE AMERICAN  
GYNECOLOGICAL SOCIETY.

VOLUME 16.

FOR THE YEAR 1891.



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1891.



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## NOTE.

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THE Society does not hold itself responsible for the views enunciated in the papers read at its meetings.

HENRY CLARK COE, M.D., *Secretary*,  
27 EAST SIXTY-FOURTH STREET, NEW YORK.



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OFFICERS AND FELLOWS  
OF THE  
AMERICAN GYNECOLOGICAL SOCIETY.

1891.





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\* DECEASED

ELECTED

1877. \*JOHN L. ATLEE, M.D., Lancaster, Pa.  
1884. GEORGE GRANVILLE BANTOCK, M.D., London, Eng.  
1876. ROBERT BARNES, M.D., London, England.  
1878. JOHN S. BILLINGS, M.D., LL.D., U. S. Army, Washington.  
1890. HENRY F. CAMPBELL, A.M., M.D., Augusta, Georgia.  
1889. M. CHARPENTIER, M.D., Paris, France.  
1877. \*JOHN C. DALTON, M.D., New York.  
1888. J. AMEDÉE DOLÉRIS, M.D., Paris, France.  
1878. \*J. MATTHEWS DUNCAN, M.D., London, England.  
1888. ALEXANDER DUNLAP, M.D., Springfield, Ohio.  
1876. \*JOSEPH A. EVE, M.D., Augusta, Georgia.  
1889. ROBERT P. HARRIS, M.D., Philadelphia.  
1888. GRAILY HEWITT, M.D., London, England.  
1881. J. BRAXTON HICKS, M.D., London, England.  
1876. THOMAS KEITH, M.D., London, England.  
1888. GILMAN KIMBALL, M.D., Lowell, Massachusetts.  
1891. CHRISTIAN G. LEOPOLD, M.D., Dresden, Germany.  
1888. AUGUST MARTIN, M.D., Berlin, Germany.  
1876. \*ALFRED H. M'CLINTOCK, M.D., Dublin, Ireland.  
1888. EMIL NOEGGERATH, M.D., Wiesbaden, Germany.  
1891. ROBERT OLSHAUSEN, M.D., Berlin, Germany.  
1877. CHARLES PAJOT, M.D., Paris, France.  
1885. W. S. PLAYFAIR, M.D., London, England.  
1891. SAMUEL POZZI, M.D., Paris, France.  
1888. \*WILLIAM O. PRIESTLEY, M.D., London, England.  
1876. \*CARL SCHROEDER, M.D., Berlin, Germany.  
1876. \*GUSTAV SIMON, M.D., Heidelberg, Germany.  
1888. ALEXANDER R. SIMPSON, M.D., Edinburgh, Scotland.  
1888. \*D. HUMPHREYS STORER, M.D., Boston.  
1882. LAWSON TAIT, Esq., Birmingham, England.  
1881. S. TARNIER, M.D., Paris, France.  
1888. \*ISAAC E. TAYLOR, M.D., New York.  
1882. J. KNOWSLEY THORNTON, Esq., London, England.  
1876. SIR T. SPENCER WELLS, Bart., London, England.  
1881. F. WINCKEL, M.D., Dresden, Germany.  
1876. \*MARMADUKE B. WRIGHT, M.D., Cincinnati.

Total, twenty-five Honorary Fellows.

## FELLOWS.

---

\* Denotes Fellows who are deceased.

† Denotes Fellows who have resigned.

1888.—ASHBY, THOMAS A., M.D. Professor of Diseases of Women in Baltimore Medical College; Professor of Obstetrics and Clinical Gynecology in Woman's Medical College of Baltimore; Consulting Gynecologist to Home for Incurables; Obstetrician and Gynecologist to Good Samaritan Hospital; Gynecologist to Maryland General Hospital; President of Medical and Chirurgical Faculty of Maryland. 1125 Madison Avenue, Baltimore.

1886.—BAER, B. F., M.D. Ex-President Obstetrical Society of Philadelphia; Professor of Gynecology in the Philadelphia Polyclinic. 2010 Chestnut Street, Philadelphia.

1882.—BAKER, WILLIAM H., M.D. Professor of Gynecology, Harvard University; Surgeon to the Free Hospital for Women. *Council*, 1886, 1890. *Vice-President*, 1891. 22 Mount Vernon Street, Boston.

1889.—BALDY, J. M., M.D., 330 South Seventeenth St., Philadelphia.

*Founder*.—\*BARKER, FORDYCE, M.D., LL.D. 1891.

*Founder*.—BATTEY, ROBERT, M.D. Formerly Professor of Obstetrics, and Clinical Professor of Gynecological Surgery, Atlanta Medical College. *Vice-President*, 1880. *President*, 1889. 412 First Avenue, Rome, Georgia.

1875.—†BIXBY, GEORGE H., M.D. 1889.

1888.—BOLDT, HERMANN J., M.D. Gynecologist to the German Poliklinik; Surgeon to St. Mark's Hospital; Professor of Diseases of Women, New York Post-Graduate School and Hospital; Fellow of the British Gynecological Society. 245 West Forty-second Street, New York.

1878.—†BOZEMAN, NATHAN, M.D. 1886.

1881.—BROWNE, B. BERNARD, M.D. Professor of Diseases of Women and Clinical Midwifery in the Woman's Medical College of Baltimore; Gynecologist to the Good Samaritan Hospital. *Council*, 1885, 1889-'90. 1218 Madison Avenue, Baltimore.

*Founder*.—\*BUCKINGHAM, CHARLES E., M.D. 1877.

*Founder*.—BUSEY, SAMUEL C., M.D., LL.D. Ex-President of the Association of American Physicians (1889-'90); Member of the American Pediatric Society; Honorary Member of the Medical Society of the State of New York; Corresponding Member of the Boston Gynecological Society. *Vice-President*, 1883. 1545 I Street, N. W., Washington.

1889.—BYFORD, HENRY T., M.D. Professor of Clinical Gynecology, Woman's Medical College; Professor of Gynecology, Chicago Post-Graduate Medical School; Gynecologist to St. Luke's Hospital; Surgeon to the Woman's Hospital of Chicago. 3001 Calumet Avenue, Chicago.

*Founder*.—\*BYFORD, WILLIAM H., M.D., LL.D. 1890.

*Founder*.—BYRNE, JOHN, M.D., M.R.C.S.E. Formerly Clinical Professor of Uterine Surgery, Long Island College Hospital; Surgeon-in-Chief to St. Mary's Hospital for Diseases of Women. *Council*, 1879, 1883. *President*, 1892. 314 Clinton Street, Brooklyn.

*Founder*.—CHADWICK, JAMES R., A.M., M.D. Formerly Clinical Instructor in Gynecology, Harvard University. *Secretary*, 1876-'82. *Vice-President*, 1883, 1888. *Council*, 1892. 270 Clarendon Street, Boston.

1889.—CLEVELAND, CLEMENT, A.M., M.D. Surgeon to the Woman's Hospital in the State of New York; Gynecologist to the New York Cancer Hospital. 59 West Thirty-eighth Street, New York.

1888.—COE, HENRY C., A.M., M.D., M.R.C.S. Gynecologist to the New York Cancer Hospital; Assistant Surgeon to the Woman's Hospital; Obstetric Surgeon to the Maternity Hospital; Obstetrician to the Infant Asylum; Professor of Gynecology, New York Polyclinic; Fellow of the Southern Surgical and Gynecological Association. *Secretary*, 1891, 1892. 27 East Sixty-fourth Street, New York.

1888.—COLEMAN, JOHN SCOTT, M.D. Fellow of the American Surgical Association. 563 Green Street, Augusta, Georgia.

1889.—CURRIER, ANDREW F., A.B., M.D. Instructor in Gynecology, at the Post-Graduate Medical School; Assistant Surgeon to the Skin and Cancer Hospital; Attending Gynecologist to Bellevue Hospital, Out-patient Department. 159 East Thirty-seventh Street, New York.

1889.—DAVENPORT, FRANCIS H., A.B., M.D. Assistant in Gynecology, Harvard Medical School; Assistant Surgeon to the Free Hospital for Women; Physician to the Department of Diseases of Women, Boston Dispensary. *Council*, 1891. 5 Park Square, Boston.

1891.—DAVIS, EDWARD P., A.M., M.D. Clinical Lecturer on Obstetrics, Jefferson Medical College; Professor of Obstetrics and Diseases of Children, Philadelphia Polyclinic; Visiting Obstetrician to Philadelphia Hospital; Attending Physician to Children's Department, Howard Hospital. 250 South Twenty-first Street, Philadelphia.

*Founder*.—DRYSDALE, THOMAS M., A.M., M.D. *Council*, 1886. 1531 Arch Street, Philadelphia.

1888.—DUDLEY, A. PALMER, M.D. Instructor in Gynecology, New York Post-Graduate Medical School; Gynecologist to Randall's Island Hospital; Gynecologist to Northeastern Dispensary. 640 Madison Avenue, New York.

1886.—DUDLEY, EMILIUS CLARK, A.B., M.D. Professor of Gynecology in Chicago Medical College; Fellow of the British Gynecological Society. *Council*, 1891. 1619 Indiana Avenue, Chicago.

1879.—DUER, EDWARD L., M.D. Lecturer on Diseases of Women and Children at the Philadelphia Hospital; Gynecologist to the Presbyterian Hospital. 1604 Locust Street, Philadelphia.

1891.—EDEBOHLS, GEORGE M., A.M., M.D. Gynecologist to St. Francis Hospital. 198 Second Avenue, New York.

1887.—EMMET, BACHE MCE., M.D. Professor of Diseases of Women, New York Post-Graduate Medical School; Surgeon to the Woman's Hospital in the State of New York. 18 East Thirtieth Street, New York.

*Founder*.—EMMET, THOMAS ADDIS, M.D., LL.D. Surgeon to the Woman's Hospital in the State of New York; Consulting Physician to the Roosevelt Hospital and to the New York

Foundling Asylum. *Council*, 1878-'79. *President*, 1882. 93 Madison Avenue, New York.

*Founder*.—ENGELMANN, GEORGE J., A.M., M.D. Master in Obstetrics, Vienna; Professor of Diseases of Women and Operative Midwifery, Missouri Medical College and Post-Graduate School; Consulting Surgeon to the St. Louis Female Hospital. *Council*, 1879, 1882. *Vice-President*, 1885. 3003 Locust Street, St. Louis.

1890.—ETHERIDGE, JAMES H., A.M., M.D. Professor of Therapeutics and Medical Jurisprudence, Rush Medical College; Gynecologist to the Presbyterian Hospital and Central Free Dispensary; Physician to St. Luke's Hospital; President of the Chicago Medical Society. 1634 Michigan Avenue, Chicago.

1889.—FORD, WILLIS E., A.M., M.D. 266 Genesee Street, Utica, New York.

1881.—FOSTER, FRANK P., M.D. *Secretary*, 1882-'85. *Council*, 1885, 1888. 16 East Thirty-first Street, New York.

1890.—FRY, HENRY D., M.D. 1133 Fourteenth Street, N. W., Washington.

1877.—GARRIGUES, HENRY J., A.M., M.D. Professor of Obstetrics, New York Post-Graduate Medical School; Obstetric Surgeon to the New York Maternity Hospital; Consulting Obstetrician to the New York Infant Asylum; Gynecologist to the German Hospital and Dispensary. *Council*, 1882. 155 Lexington Avenue, New York.

1888.—GEHRUNG, EUGENE C., M.D. President of the St. Louis Obstetrical and Gynecological Society; Chief of the Gynecological Department of the South Side Dispensary; Consulting Surgeon to the St. Louis Female Hospital. 2215 Olive Street, St. Louis.

1881.—†GILLETTE, WALTER R., M.D. 1889.

*Founder*.—GOODELL, WILLIAM, A.M., M.D. Professor of Gynecology, University of Pennsylvania. *Council*, 1876-'77, 1880. *Vice-President*, 1878. 1418 Spruce Street, Philadelphia.

1877.—GOODMAN, JOHN, M.D., Professor of Obstetrics, Louisville Medical College. 236 Third Street, Louisville.

1888.—GORDON, SETH C., M.D. Portland, Maine. *Council*, 1892.

1890.—GRANDIN, EGBERT H., M.D. Obstetric Surgeon to New York Maternity Hospital; Obstetrician to the New York Infant Asylum. 36 East Fifty-eighth Street, New York.

1886.—GREEN, CHARLES M., A.B., M.D. Instructor in Obstetrics, Harvard University; Obstetric Physician to the Boston Dispensary; Assistant Visiting Physician to the Boston Lying-in Hospital; Physician to the Out-patient Department for the Diseases of Women, Boston City Hospital. 78 Marlborough Street, Boston.

1887.—HANKS, HORACE TRACY, M.D. Professor of Diseases of Women in the New York Post-Graduate School; Surgeon to the New York Woman's Hospital; Consulting Surgeon to the Northeastern Dispensary; Fellow of the British Gynecological Society; President of the New York Obstetrical Society (1887-'89); Vice-President of the New York Academy of Medicine (1882-'85). *Council*, 1892. 766 Madison Avenue, New York.

1891.—HARDON, VIRGIL O., M.D. Professor of Obstetrics and Diseases of Women and Children, Atlanta Medical College. 38 North Forsyth Street, Atlanta, Ga.

1891.—HIRST, BARTON COOKE, M.D. Professor of Obstetrics, University of Pennsylvania; Obstetrician to the University and Maternity Hospitals; Consulting Obstetrician to the Lying-in Charity. 250 South Seventeenth Street, Philadelphia.

*Founder*.—HOWARD, WILLIAM T., M.D. Professor of the Diseases of Women and Children, and of Clinical Medicine, University of Maryland; Gynecologist to the University Hospital; Gynecologist to the Woman's Hospital of the State of Maryland; Consulting Physician to the Hebrew Hospital and Asylum Association of Baltimore, Maryland. *Vice-President*, 1880. *Council*, 1883. *President*, 1884. 804 Madison Avenue, Baltimore.

1885.—\*HUNTER, JAMES BRADBRIDGE, M.D. 1889.

1891.—INGALLS, PHINEAS H., A.M., M.D. Gynecologist to the Hartford Hospital. 112 High Street, Hartford, Conn.

1875.—†INGHAM, JAMES V., M.D. 1889.

1877.—JACKSON, A. REEVES, A.M., M.D. Professor of the Diseases of Women and of Clinical Gynecology, College of Physicians and Surgeons of Chicago; formerly Surgeon-in-Chief

of the Woman's Hospital of the State of Illinois; Consulting Surgeon to the Dispensary of the Woman's Christian Association; Chief of the Gynecological Department of the West Side Dispensary. *Council*, 1883, 1884, 1886. *Vice-President*, 1888. *President*, 1891. 271 Michigan Avenue, Chicago.

1889.—JAGGARD, W. W., M.D. Professor of Obstetrics, Chicago Medical College; Obstetrician to Mercy Hospital; President of the Chicago Gynecological Society. 2330 Indiana Avenue, Chicago.

1886.—JANVRIN, JOSEPH E., M.D. President of the New York Obstetrical Society (1889-1891); Gynecologist to the Skin and Cancer Hospital; Consulting Surgeon to St. Elizabeth's Hospital. *Council*, 1889, 1892. 191 Madison Avenue, New York.

*Founder*.—JENKS, EDWARD W., M.D., LL.D. Formerly Professor of the Medical and Surgical Diseases of Women and of Clinical Gynecology, Chicago Medical College; Gynecologist to the Mercy Hospital. *Council*, 1879. *Vice-President*, 1889. 84 Lafayette Avenue, Detroit.

1885.—JEWETT, CHARLES, A.M., M.D. Professor of Obstetrics and Diseases of Children, Long Island College Hospital, Brooklyn; Attending Physician to Long Island College Hospital; Physician-in-Chief to Department of Children's Diseases, St. Mary's Hospital, Brooklyn; Fellow of the British Gynecological Society. 307 Gates Avenue, Brooklyn.

*Founder*.—JOHNSON, JOSEPH TABER, A.M., Ph.D., M.D. Professor of Gynecology, University of Georgetown; Gynecologist to the Providence Hospital; President of the Woman's Dispensary; President of the Medical Society of the District of Columbia (1887); Member British Medical Association; Fellow of the British Gynecological Society; President of the Washington Obstetrical and Gynecological Society. *Council*, 1881, 1884. *Secretary*, 1885-'90. *Vice-President*, 1891. 926 Farragut Square, Washington.

1886.—JOHNSTONE, ARTHUR W., A.M., M.D. Fellow of the British Gynecological Society. 285 Auburn Avenue, Mt. Auburn, Cincinnati.

1887.—KELLY, HOWARD A., M.D. Professor of Gynecology



cology and Obstetrics in Johns Hopkins University; Gynecologist and Obstetrician to the Johns Hopkins Hospital; Consulting Surgeon to the Kensington Hospital for Women, Philadelphia. Johns Hopkins Hospital, Baltimore.

1886.—KING, ALBERT F. A., A.M., M.D. Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, and in the University of Vermont; President of the Washington Obstetrical and Gynecological Society (1885-'87); Fellow of the British Gynecological Society; Consulting Physician to the Children's Hospital, Washington; Consulting Physician to the Woman's Dispensary. 1315 Massachusetts Avenue (N. W.), Washington.

1887.—KOLLOCK, CORNELIUS, A.M., M.D. Ex-President South Carolina Medical Association; Fellow of the American Academy of Medicine; President of the Pee-Dee Medical Association; Fellow of the Southern Surgical and Gynecological Association. *Vice-President*, 1892. Cheraw, S. C.

1891.—KRUG, FLORIAN, M.D. Gynecologist to the German Hospital. 13 East Forty-first Street, New York.

1881.—LEE, CHARLES CARROLL, A.M., M.D., LL.D. Professor of Gynecology in the New York Post-Graduate School; Consulting Surgeon to the Charity Hospital, the New York State Woman's Hospital, and St. Elizabeth's Hospital; Physician to the New York Foundling Asylum. *Council*, 1886. 79 Madison Avenue, New York.

*Founder*. LUSK, WILLIAM T., M.D. Professor of Obstetrics, of the Diseases of Women and Children, and of Clinical Midwifery, Bellevue Hospital Medical College; Physician to Bellevue Hospital; Consulting Surgeon to the Maternity Hospital; Visiting Physician to the Emergency Lying-in Hospital. *Vice-President*, 1889. 47 East Thirty-fourth Street, New York.

*Founder*.—\*LYMAN, GEORGE H., M.D. 1891.

1891.—MACLAREN, ARCHIBALD, B.S., M.D. Adjunct Professor of Gynecology, Minnesota State University; Member of the Minnesota Academy of Medicine; Gynecologist to St. Paul Free Dispensary; Attending Physician to St. Luke's Hospital, St. Paul. 326 Wabasha Street, St. Paul, Minn.

1882.—MANN, MATTHEW D., A.M., M.D. Professor of Obstetrics and Gynecology, University of Buffalo; Gynecologist and Consulting Obstetrician to the Buffalo General Hospital. *Treasurer*, 1883-'92. 37 Allen Street, Buffalo, N. Y.

1891.—MARTIN, FRANKLIN H., M.D. Professor of Gynecology, Post-Graduate Medical School of Chicago; Surgeon to the Woman's Hospital of Chicago. 163 State Street, Chicago.

1883.—MAURY, RICHARD B., M.D. *Council*, 1885, 1888. *Vice-President*, 1892. 111 Court Street, Memphis, Tenn.

1891.—MOSELEY, WILLIAM E., M.D. President of the Baltimore Gynecological and Obstetrical Society; Gynecologist to the Union Protestant Infirmary. 614 North Howard Street, Baltimore, Md.

*Founder*.—MUNDÉ, PAUL F., M.D. Master in Obstetrics, Vienna; Professor of Gynecology, New York Polyclinic and Dartmouth College; Gynecologist to Mount Sinai Hospital; Consulting Surgeon to St. Elizabeth's Hospital. *Treasurer*, 1876-'83. *Vice-President*, 1884. 20 West Forty-fifth Street, New York.

1890.—MURRAY, ROBERT A., M.D. Obstetric Surgeon to Maternity Hospital. 235 West Twenty-third Street, New York.

1891.—NOBLE, CHARLES P., M.D. Surgeon to Kensington Hospital for Women; Lecturer on Gynecology, Philadelphia Polyclinic. 2134 Hancock Street, Philadelphia.

1880.—PALMER, CHAUNCEY D., M.D. Professor of Obstetrics, of the Medical and Surgical Diseases of Women, and of Clinical Gynecology in the Medical College of Ohio; Professor of Gynecology and of Clinical Gynecology in the Woman's State Hospital and Medical College; Obstetrician and Gynecologist to the Cincinnati Hospital. *Council*, 1888. 308 West Seventh Street, Cincinnati.

1885.—PARISH, WILLIAM H., M.D. Obstetrician to the Philadelphia Hospital; Consulting Obstetrician to the Philadelphia Lying-in Charity; Professor of Anatomy in the Woman's Medical College of Pennsylvania; Professor of Obstetrics, Dartmouth Medical College; Consulting Surgeon, Kensington Hospital; Consulting Gynecologist, St. Agnes's Hospital; Gyne-

cologist to the Philadelphia Polyclinic. 1435 Spruce Street, Philadelphia.

*Founder.*—PARVIN, THEOPHILUS, M.D., LL.D. Professor of Obstetrics and of the Diseases of Women and Children in the Jefferson Medical College. *Council*, 1876-'77. *Vice-President*, 1882, 1886. 1626 Spruce Street, Philadelphia.

*Founder.*—\*PEASLEE, E. RANDOLPH, M.D., LL.D. 1878.

*Founder.*—†PENROSE, RICHARD A. F., A.M., M.D., LL.D. 1885.

1881.—POLK, WILLIAM M., M.D. Professor of Obstetrics and Diseases of Women and Children, University of the City of New York; Physician to Bellevue Hospital and to the Emergency Lying-in Hospital; Consulting Gynecologist to St. Luke's Hospital. *Vice-President*, 1890. *Council*, 1891. 7 East Thirty-sixth Street, New York.

1877.—REAMY, THADDEUS A., A.M., M.D., LL.D. Professor of Clinical Gynecology in the Medical College of Ohio; Gynecologist and Obstetrician to the Cincinnati Hospital; Gynecologist to the Good Samaritan Hospital; Surgeon to the Woman's Hospital, Cincinnati; Consulting Gynecologist to Christ's Hospital; Consulting Gynecologist to the Ohio State Hospital for Women; Fellow of the Medico-Chirurgical Society of Philadelphia; Corresponding Member of the Boston Gynecological Society. *Vice-President*, 1881. *Council*, 1883. *President*, 1885. Oak Street, Cincinnati.

*Founder.*—REEVE, JOHN C., M.D. President of the Medical Staff of St. Elizabeth's Hospital; formerly Professor of *Materia Medica* and Therapeutics, Medical College of Ohio. *Council*, 1881, 1885. *Vice-President*, 1887. Corner of Third and Wilkinson Streets, Dayton, Ohio.

1890.—REYNOLDS, EDWARD, M.D. Physician to the Boston Lying-in Hospital, Out-patient Department; Physician to the Stanford Street Dispensary for Women. 130 Wilkinson Street, Boston.

1877.—REYNOLDS, JOHN P., M.D. Late Professor of Obstetrics, Harvard University; Consulting Surgeon to the Boston City Hospital. *President*, 1890. 236 Clarendon Street, Boston.

*Founder.*—RICHARDSON, WILLIAM L., M.D. Professor of Obstetrics, Harvard University; Physician to the Boston Lying-

in Hospital; Visiting Physician to the Massachusetts General Hospital. *Vice-President*, 1884. 225 Commonwealth Avenue, Boston.

1881.—SAWYER, EDWARD WARREN, M.D. 3733 Vincennes Avenue, Chicago.

1879.—\*SCOTT, JOHN, M.D., M.R.C.S.I. 1886.

1886.—SIMS, H. MARION, M.D. Surgeon to St. Elizabeth's Hospital; Gynecologist to the New York Infant Asylum; Professor of Gynecology, New York Polyclinic. 4 East Forty-seventh Street, New York.

*Founder*.—\*SIMS, J. MARION, M.D., LL.D. 1883.

*Founder*.—SINCLAIR, ALEXANDER D., M.D. Consulting Physician to the Boston City Hospital, the Boston Lying-in Hospital, and the Free Hospital for Women. *Council*, 1880. 35 Newberry Street, Boston.

*Founder*.—SKENE, ALEXANDER J. C., M.D. Professor of the Medical and Surgical Diseases of Women, Long Island College Hospital. *Council*, 1878, 1880. *President*, 1886-'87. 167 Clinton Street, Brooklyn.

*Founder*.—\*SMITH, ALBERT H., M.D. 1886.

1891.—STRONG, CHARLES P., A.B., M.D. Assistant Surgeon to the Free Hospital for Women; Assistant in Gynecology, Harvard Medical School; Physician to Out-patients, Massachusetts General Hospital. 1 Exeter Street, Boston.

1879.—SUTTON, R. STANSBURY, A.M., M.D., LL.D. Formerly President of the American Academy of Medicine and of the Pittsburg Obstetrical and Gynecological Society; Associate Fellow of the Philadelphia Obstetrical Society; Fellow of the British Gynecological Society; Surgeon to Terrace Bank Hospital for Women. *Council*, 1883. 419 Penn Avenue, Pittsburg.

*Founder*.—THOMAS, T. GAILLARD, M.D., LL.D. Professor Emeritus of the Diseases of Women and Children, College of Physicians and Surgeons; Consulting Surgeon to the Woman's Hospital in the State of New York; Consulting Physician to the Nursery and Child's Hospital, New York, and to St. Mary's Hospital, Brooklyn. *President*, 1879. *Council*, 1883. 600 Madison Avenue, New York.

*Founder*.—\*TRASK, JAMES D., M.D. 1883.

1891.—TUTTLE, GEORGE M., A.B., M.D. Professor of Gynecology, College of Physicians and Surgeons; Gynecologist to Roosevelt Hospital; Consulting Surgeon to New York Cancer Hospital and Infirmary for Women and Children. 49 West Thirty-eighth Street, New York.

1879.—†UNDERHILL, J. W., M.D. 1886.

*Founder*.—VAN DE WARKER, ELY, M.D. Surgeon to the Central New York Hospital for Women; Surgeon to the Syracuse Woman's and Children's Hospital. *Council*, 1884-'89. 104 Fayette Park, Syracuse, N. Y.

*Founder*.—\*WALLACE, ELLERSLIE, M.D. 1885.

1891.—WATHEN, WILLIAM H., M.D. Professor of Abdominal Surgery and Gynecology in the Kentucky School of Medicine; Ex-President of the Section on Obstetrics and Gynecology of the American Medical Association; Ex-President of the Kentucky State Medical Society; Fellow of the American Association of Obstetricians and Gynecologists and of the Southern Surgical and Gynecological Association; Consulting Gynecologist to the Louisville City Hospital. The Fonda, West Chestnut Street, Louisville.

*Founder*.—\*WHITE, JAMES P., M.D. 1881.

1867.—\*WILSON, ELLWOOD, M.D. 1889.

*Founder*.—WILSON, HENRY P. C., M.D. Ex-President of the Medical and Chirurgical Faculty of Maryland, of the Baltimore Academy of Medicine, and of the Baltimore Obstetrical and Gynecological Society; Surgeon to the Hospital for the Women of Maryland; Consulting Gynecologist to St. Agnes's Hospital; Member of the British Medical Association; Fellow of the British Gynecological Society; Fellow of the Southern Surgical and Gynecological Association; Honorary Fellow of the Edinburgh Obstetrical Society; Consulting Surgeon to the Johns Hopkins Hospital. *Vice-President*, 1879. *Council*, 1884. *President*, 1889. 814 Park Avenue, Baltimore.

1886.—WYLIE, W. GILL, M.D. Professor of Gynecology, New York Polyclinic; Gynecologist to Bellevue Hospital, Consulting Surgeon to the Methodist Episcopal Hospital, Brooklyn; Fellow of the British Gynecological Society. 40 West Fortieth Street, New York.

Total, 83 Active Fellows.



MINUTES OF THE PROCEEDINGS  
AT THE  
SIXTEENTH ANNUAL MEETING  
OF THE  
AMERICAN GYNECOLOGICAL SOCIETY,  
HELD IN THE  
COLUMBIAN UNIVERSITY,  
*Washington, D. C.,*  
SEPTEMBER 22, 23 AND 24, 1891.





## SIXTEENTH ANNUAL MEETING.

WASHINGTON, TUESDAY, WEDNESDAY AND THURSDAY, *September 22, 23  
and 24, 1891.*

THE following Fellows were present :

THOMAS A. ASHBY . . . . .	BALTIMORE.
B. F. BAER . . . . .	PHILADELPHIA.
WILLIAM H. BAKER . . . . .	BOSTON.
J. M. BALDY . . . . .	PHILADELPHIA.
BERNARD B. BROWNE . . . . .	BALTIMORE.
SAMUEL C. BUSEY . . . . .	WASHINGTON.
HENRY T. BYFORD . . . . .	CHICAGO.
JOHN BYRNE . . . . .	BROOKLYN.
JAMES R. CHADWICK . . . . .	BOSTON.
CLEMENT CLEVELAND . . . . .	NEW YORK.
HENRY C. COE . . . . .	NEW YORK.
ANDREW F. CURRIER . . . . .	NEW YORK.
FRANCIS H. DAVENPORT . . . . .	BOSTON.
THOMAS M. DRYSDALE . . . . .	PHILADELPHIA.
A. PALMER DUDLEY . . . . .	NEW YORK.
EDWARD L. DUER . . . . .	PHILADELPHIA.
THOMAS ADDIS EMMET . . . . .	NEW YORK.
JAMES H. ETHERIDGE . . . . .	CHICAGO.
WILLIS E. FORD . . . . .	UTICA.
FRANK P. FOSTER . . . . .	NEW YORK.
HENRY D. FRY . . . . .	WASHINGTON.
HENRY J. GARRIGUES . . . . .	NEW YORK.
EUGENE C. GEHRUNG . . . . .	ST. LOUIS.
WILLIAM GOODELL . . . . .	PHILADELPHIA.
SETH C. GORDON . . . . .	PORTLAND, ME.
HORACE T. HANKS . . . . .	NEW YORK.
WILLIAM T. HOWARD . . . . .	PHILADELPHIA.
A. REEVES JACKSON . . . . .	CHICAGO.
JOSEPH E. JANVRIN . . . . .	NEW YORK.
EDWARD W. JENKS . . . . .	DETROIT.
CHARLES JEWETT . . . . .	BROOKLYN.
JOSEPH TABER JOHNSON . . . . .	WASHINGTON.
ARTHUR W. JOHNSTONE . . . . .	CINCINNATI.
ALBERT F. A. KING . . . . .	WASHINGTON.
CORNELIUS KÖLLOCK . . . . .	CHERAW, S. C.

CHARLES C. LEE . . . . .	NEW YORK.
WILLIAM T. LUSK . . . . .	NEW YORK.
MATTHEW D. MANN . . . . .	BUFFALO.
RICHARD B. MAURY . . . . .	MEMPHIS.
ROBERT A. MURRAY . . . . .	NEW YORK.
WILLIAM H. PARISH . . . . .	PHILADELPHIA.
THEOPHILUS PARVIN . . . . .	PHILADELPHIA.
THADDEUS A. REAMY . . . . .	CINCINNATI.
JOHN C. REEVE . . . . .	DAYTON.
EDWARD REYNOLDS . . . . .	BOSTON.
EDWARD W. SAWYER . . . . .	CHICAGO.
H. MARION SIMS . . . . .	NEW YORK.
ALEXANDER J. C. SKENE . . . . .	BROOKLYN.
R. STANSBURY SUTTON . . . . .	PITTSBURG.
HENRY P. C. WILSON . . . . .	BALTIMORE.
W. GILL WYLIE . . . . .	NEW YORK.

Total, 51 Fellows.

FIRST DAY—*Tuesday, September 22, 1891.*

*Morning Session.*—The meeting was called to order by the President, Dr. A. Reeves Jackson, of Chicago.

Twenty Fellows responded to the roll-call.

*Opening Remarks by the President.*—I have a message which is struggling for deliverance, and which will brook no further delay.

One year ago, in a moment of great kindness, you did me the honor to elect me to the highest office in your gift. It was an unmerited and flattering honor. It would be an affectation of indifference and of ingratitude if I did not feel and express my appreciation of this mark of your confidence. The duties devolving upon the presiding officer I shall endeavor to discharge to the best of my poor ability; but they would seem appalling were it not that I feel sure of your cordial commiseration for any short-comings which may appear. For your kindness in the past, and for that which I now bespeak, I sincerely thank you.

The President introduced Dr. Joseph Taber Johnson, of Washington, who delivered the following address of welcome:

MR. PRESIDENT AND FELLOWS OF THE AMERICAN GYNECOLOGICAL SOCIETY: It gives me the greatest pleasure to welcome you again to our city.

In speaking for the local committee of arrangements I am

giving voice at the same time to the Medical Profession of Washington, who, I am sure, are equally glad with us to welcome you once more.

While as a profession we are not equally acquainted with you all, you are all known by your writings, which have not followed but preceded you, so that none of you are strangers, but all are friends. The good work which has been accomplished by the American Gynecological Society has made it famous, not only in our own country, but throughout the civilized world. Its grand object being the dissemination of the knowledge of all that pertains to the diseases of women and obstetrics, the Society is especially welcome in all communities where the welfare of woman is held dear, and this city, I assure you, is second to none in this respect.

Your coming among us, then, is doubly welcome; first, on account of our gratification at meeting you personally, and secondly, on account of the cause which you advocate.

The warmth and heartiness of this welcome is in no way lessened on account of the presence in our midst of a number of other special societies which form parts of the American Congress of Physicians and Surgeons now in session. They are all welcome, and especially so, because by their coming we are insured once in *three* years the pleasure of seeing the faces, and hearing the voices, of the Fellows of the American Gynecological Society, a pleasure which is enjoyed by our less favored sister cities only once in about ten years.

The Society has never met during the sixteen years of its existence without adding to its own reputation, and to the lustre of American gynecological literature by the high order of its papers and discussions, as is evidenced by the volumes of its published *Transactions*, and I predict for its Sixteenth Annual Meeting an unusually profitable occasion, as a glance at its most excellent programme of thirty-two papers, embracing subjects of the most intense and absorbing interest, will testify. Subjects such as the best treatment of uterine cancer, Cæsarean section, the causes of uterine disease, the technique of hysterectomy, the perfecting of laparotomy, the surgical treatment of displacements, the electrical treatment of fibroid tumors, and many other topics, will

be discussed by such an able body of men as to go very far toward the settlement of important matters now and heretofore the subject of dispute.

The keen interest felt by the entire medical profession in all that relates to the dearest members of society will be attested here by the number of attentive listeners to your papers and discussions.

We feel that our superficial knowledge is to be deepened and broadened by the scientific and social contact with the master minds in this department of medicine and surgery, which such a Congress as the one now in session permits and encourages. And this leads me to say that the union of fourteen national special societies in one American Congress of specialists, in *all* the departments of medicine and surgery, brings men together now at our National Capital which no other medical convention or assemblage of medical men has ever done, or ever will do, in such numbers as are associated together to-day in Washington.

Opportunities are thus offered for the interchange and comparison of different and conflicting views and opinions upon a wider range of subjects, and by a greater number of the ablest men than is possible in any other convention in any other city. It is earnestly hoped that during your own sessions, as well as in the other sessions of the Congress, and in the social entertainments arranged by the Executive Committee, you will form such good impressions and carry away such kindly recollections as to make you more than willing to come again.

An address of welcome would be incomplete if your attention were not drawn to some of the points of interest in this National city, which, if you have time between the scientific sessions or after the final adjournment of the Congress, it might interest you to visit.

While riding through our miles of smoothly paved avenues and streets you can find much to stimulate your patriotism and cause your hearts to swell with pride that you are not only American doctors, but that you are at the same time American citizens.

While millions of dollars have been expended in the construction of some of the most beautiful and useful edifices of white

marble and enduring granite which the world has ever seen for governmental purposes, we have, at the same time, in the Smithsonian Institution, in the National and Medical Museum, in the Observatory, and in the University Buildings opportunities for the cultivation of the mind in the arts and sciences, law, theology, and medicine.

To any and to all of these you are welcome, as well as to the towering white monument generously erected by the American people in honor of the Father of his Country, and to his burial place at Mount Vernon on the placid Potomac.

This is the first time we have met since our organization when it has been impossible for one of our most distinguished and enthusiastic Fellows to answer to his name as the Secretary calls the roll. The sense of personal loss and personal grief which I so keenly feel in the lamented death of Dr. Fordyce Barker, I am sure is shared by every Fellow of this Society, and were it not for the fact that upon our programme is a special memorial by his able and special friend, I would feel tempted now to call your attention to many points in his useful and successful career. I shall refer to but one, which, in a certain sense, may be considered a key to all. In reply to a question in regard to his wonderful success in many directions and a faint hint in regard to the influence of good luck, he replied: "Oh, no! I never accomplished anything of any real value, and I doubt if anybody ever did, which was not the result of hard work."

In this hurrying and superficial age let us remember this expression of our departed friend as a motto, and emulate his example in the elucidation of the many doubtful and dangerous theories that come up for consideration and settlement in the Society, which he did so much to found, and which he loved so well. Hard, conscientious work done here will bring forth much good fruit in the saving of useful lives, in the prevention of disastrous wrecks, and for the good of humanity.

The result of much hard work and ripe experience lies just before us in the splendid programme upon the table, and I shall detain you no longer from the full enjoyment which it so temptingly offers, except to again and again bid you a hearty welcome.

On recommendation of the Council, the following physicians

were nominated as guests of the Society: Dr. W. W. Potter, of Buffalo; Dr. Archibald McLaren, of St. Paul; Dr. George E. West, of Chattanooga; Dr. John W. Williams, Dr. W. E. Moseley, Dr. G. L. Thornihill, and Dr. W. T. Howard, Jr., of Baltimore; Dr. Calvin Adams, Dr. W. E. Porter, Dr. Florian Krug, Dr. H. N. Vineberg, and Dr. George Edebohls, of New York; Dr. Henry P. Harvey, U. S. N.; Dr. Wood, U. S. A.; Dr. W. H. Wathen, of Louisville; Dr. F. E. Hitchcock, of Rockland, Me.; Dr. George E. Keith and Dr. George Baldwin, of Brooklyn; Dr. C. N. Smith, of Toledo; Dr. William Watkins, of Chicago; Dr. Virgil Hardon, of Atlanta; Dr. William Gardner and Dr. T. Johnson Alloway, of Montreal; Dr. Ernest Cushing, of Boston; Dr. E. M. Praeger, of Nanimo, British Columbia; Dr. L. S. McMurtry, of Louisville; Dr. M. Rosenwasser, of Cleveland; Dr. Edward P. Davis, of Philadelphia; Dr. P. H. Ingalls, of Hartford; Dr. Charles Sutherland, Surgeon-General U. S. A.; Dr. Osamu Otsuki, Fuchin, Japan; Hon. Thomas Morgan, Indian Commissioner.

Dr. John Reeve, of Dayton, read a paper on "The Advantages of Mixed Narcosis in Gynecological Surgery," which was discussed by Drs. Sawyer, Baldy, Howard and Byrne. A paper by Dr. Henry C. Coe, of New York, on "Accidental Hemorrhage Occurring during the First Stage of Labor at Term," was discussed by Drs. Jewett, Murray, Fry, Reamy, Reynolds, Skene, and T. A. Emmet. Dr. Edward W. Jenks, of Detroit, read a paper on "The Therapeutic Aspect of Some Ovarian Disorders." Discussed by Drs. Currier, Coe, and Baldy.

*Afternoon Session.*

Dr. J. M. Baldy, of Philadelphia, read a paper entitled "Insanity following Gynecological Operations," which was not discussed.

Dr. Joseph E. Janvrin, of New York, read a paper with this title: "A Clinical Study of Primary Carcinomatous and Sarcomatous Neoplasms between the Layers of the Broad Ligament, with Report of Cases." Discussed by Drs. Johnstone, Dudley, and King.

Dr. Robert P. Harris's paper on "The Present and Improving

Status of Cæsarean Surgery" was read by Dr. Parish, in the absence of the author. It was discussed by Drs. Garrigues, Fry, Dudley, Coe, and Murray, the discussion being closed by Dr. Parish.

Dr. H. Marion Sims, of New York, reported a "Unique Case of Multiple Neuro-lipomata following Laparotomy," after which the Society adjourned for the day.

SECOND DAY—*Wednesday, September 23d.*

*Morning Session.*—The President read his Annual Address. A vote of thanks was moved by Dr. Wilson and was carried.

A paper by Dr. W. H. Baker, of Boston, on "The Treatment of Cancer of the Cervix Uteri by High Amputation," was discussed by Drs. Byrne and Reamy, further discussion being postponed until the afternoon session.

Dr. H. J. Garrigues, of New York, read a paper on "The Best Posture in the Different Stages of Normal Labor." Discussed by Dr. King.

Dr. W. Gill Wylie's paper on "The Influence of Imperfect Development as a Cause of Uterine Disease" was discussed by Dr. Johnstone.

Dr. H. T. Byford's paper on "The Technique of Vaginal Fixation of the Stump in Abdominal Hysterectomy" was not discussed. The morning session was then terminated.

*Afternoon Session.*

The discussion of Dr. Baker's paper was resumed by Drs. Janvrin, Wylie, Byford and T. A. Emmet, being closed by the reader.

Dr. H. T. Hanks, of New York, considered the question: "Can we Avoid Mural Abscesses and Ventral Herniæ after Laparotomy?" Discussion by Drs. T. A. Emmet, Byford, Wylie, Chadwick and Maury.

Dr. Reamy read a paper on "Some Clinical Testimony as to the Ultimate Results of Removal of the Uterine Appendages." The discussion was opened by Dr. Joseph Taber Johnson, fol-

lowed by Drs. Wylie, Gordon, Coe, Byford and Gardner, and was closed by the reader.

Dr. R. B. Maury's paper on "Indications for Abdominal Section in the Treatment of Puerperal Pelvic Inflammations" was discussed by Drs. Lee, Hanks, Garrigues and Skene.

Dr. A. F. Currier, of New York, read a paper on "A Study Relative to the Functions of the Reproductive Organs in American Indian Women," of which there was no discussion. The Society then adjourned.

### THIRD DAY—*Thursday, September 24th.*

*Morning Session.*—Dr. Reeve read a paper by Professor R. Winckel, of Munich, on "Extra-uterine Pregnancy," which was discussed by Drs. Reeve, Fry and Reamy.

Dr. Cornelius Kollock's paper on "The Immediate Closure of Laceration of the Cervix" was discussed by Drs. Jewett, Murray, T. A. Emmet, Coe and A. P. Dudley.

Dr. Eugene Gehrung, of St. Louis, contributed a paper entitled "The Conservative Treatment of Pelvic Tumors and Diseases," of which there was discussion.

Dr. Edward Reynolds, of Boston, read an abstract of his paper on "The Anatomical Relations of the Lacerated Perineum to the Mechanics of its Causation." Brief remarks by Dr. Skene.

Dr. George Keith, of Brooklyn (an invited guest), read a paper on "The Electrical Treatment of Uterine Fibroids in England," which was discussed by Drs. Ford, Sutton, Baker, A. P. Dudley and Skene.

Dr. Clement Cleveland, of New York, read a brief paper on "Laparotomy in Trendelenburg's Posture," and exhibited an operating-table devised by himself. Comments were made by Drs. Goodell, Sutton and Edebohls.

Dr. Fry's paper on "Diabetes Mellitus Gravidarum" was not discussed.

As the afternoon session was omitted by vote of the Society, in order that the Fellows might participate in the meeting of the Congress, the President closed the session briefly as follows:

The President said: The labors and the pleasures of this meeting are about to close. The consciousness of work well done and



the memory of the pleasures we have had will alone remain with us. If I possessed the "wondrous gift of statement and the wondrously graceful phrase" of some of my predecessors I could grow eloquent in this moment when the joy of still being together must so soon merge into the sadness of parting. I am sure that our communion here has made us better men. I am sure that we shall go forth better equipped to perform our work in the cause of suffering women.

I had, like the prudent and careful gourmet, reserved for the last the most dainty morsel of the feast. It was to be the presentation to you of my timid and blushing successor. I would have been glad to hail his accession to the Presidency on this occasion, but he has absconded and I am unable to execute my design. My next most pleasing duty is to express to you, before laying down the gavel of office, my sincere thanks for your cordial and courteous support in the duties which have devolved upon me—duties which otherwise would have been overwhelming. I now pronounce the Sixteenth Session of this Society adjourned.

The Secretary offered the following motion, which was seconded by Dr. Baker and carried: We tender to the retiring President our sincere thanks for the firm and judicious manner in which he has presided over our deliberations.

The Society adjourned to meet in Brooklyn on the third Tuesday in September, 1892.

HENRY C. COE,  
*Secretary.*

## CONSTITUTION.

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I. THIS Society shall be known as the *American Gynecological Society*.

II. The object of this Society shall be the promotion of knowledge in all that relates to the Diseases of Women and to Obstetrics.

### FELLOWS.

III. The Fellows of this Society shall consist of Fellows and Honorary Fellows.

The Fellows shall not exceed one hundred in number.

The Honorary Fellows shall not exceed ten Americans and twenty-five foreign.

Candidates shall be proposed to the Council one month before the first day of meeting by two Fellows, and shall be balloted for at the annual meeting, a list of the names having been sent to every Fellow with the notification of the meeting.

A two-thirds affirmative vote of all the Fellows present shall constitute an election, fifteen Fellows, at least, being present.

No one shall be eligible for active fellowship until he shall have submitted to the Council a paper on some subject connected with Gynecological Science.

### HONORARY FELLOWS.

IV. The power of nominating Honorary Fellows shall be vested in the Council.

The election shall take place in the same manner as that of ordinary Fellows.

They shall enjoy all the privileges of other Fellows, but shall not be required to pay any fee, or be allowed to hold any office or cast any vote.

## OFFICERS.

V. The officers of the Society shall be a President, two Vice-Presidents, a Secretary, and a Treasurer, who, with four other Fellows, shall constitute the Council of the Society.

The nomination of all officers shall be made in open session at the business meeting, and the same shall be elected by ballot.

The officers shall enter upon their duties immediately before the adjournment of the meeting at which they were elected, and shall hold office for one year.

Any vacancy occurring between the annual meetings shall be filled temporarily by the action of the Council.

All officers shall be eligible for reëlection.

## ANNUAL MEETING.

VI. The annual meeting of the Society shall be held at such time and place as shall be designated by the Society at the previous annual meeting. It shall continue for three days, unless otherwise ordered by a vote of the Society.

## AMENDMENTS.

VII. This Constitution may be amended by two-thirds vote of all the Fellows present at an annual meeting, provided that notice of the proposed amendment has been given in writing at the annual meeting next preceding, and the same been printed in the notification of the meeting at which the vote is to be taken.

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BY - LAWS .

## PRESIDENT AND VICE-PRESIDENTS.

I. The President and Vice-Presidents shall discharge the duties belonging to their respective offices. The President shall be *ex-officio* chairman of the Council.

## SECRETARY.

II. The Secretary shall attend and keep a record of all the meetings of the Society and of the Council, of which latter he shall be *ex-officio* clerk.

At each annual meeting he shall announce the names of all who shall have ceased to be Fellows since the last report.

He shall superintend the publication of the *Transactions*, under the direction of the Council.

He shall notify candidates of their election to fellowship.

He shall send notifications of the annual meetings and of the meetings of the Council.

## TREASURER.

III. The Treasurer shall receive all moneys due, and pay all debts. He shall render an account thereof at the annual meeting, when an Auditing Committee shall be appointed to report.

## COUNCIL.

IV. The Council shall meet as often as the interests of the Society may require.

Five members shall constitute a quorum.

It shall have the management of the affairs of the Society, subject to the action of the Society at its annual meetings.

It shall arrange the order for the reading of papers at the annual meetings.

It shall not have power to make the Society liable for any debts exceeding in total one hundred dollars in the course of any one year, unless specially authorized by a vote of the Society.

It shall have the entire control of the publications of the Society, with the power to reject such papers or discussions as it deems best.

The President, or any three members, may call a meeting, notice of which shall be transmitted to every member two weeks previous to the meeting.

The Council shall determine questions by vote, or—if demanded—by ballot, the President having a casting vote.

The Council shall constitute a Board of Trial for all offences against the Constitution and By-laws, or for conduct unbecoming an honorable physician, and shall have the sole power of moving the expulsion of any Fellow.

## ORDER OF BUSINESS.

V. The Order of Business at the annual meetings of the Society shall be as follows:

- I. General Meeting at 10 A.M. each day.
  1. Reports of Committees.
  2. Reading of Papers and Discussion of the same.
- II. The Business Meeting shall be held at half-past eight o'clock P.M. on the second day of the session, at which only Fellows of the Society shall be present. The Secretary's record shall then be read; the Treasurer's accounts be submitted; the reports of Committees on other than scientific subjects be received; and all miscellaneous business be transacted.

## PAPERS, ETC.

VI. The titles of all papers to be read at any annual meeting shall be forwarded to the Secretary not later than two weeks before the first day of the meeting.

No paper shall be read before the Society which has already been printed, or been read before another body.

All papers that may be read before the Society, and accepted for publication, shall become the property of the Society, and their publication shall be under the control of the Council.

## QUORUM.

VII. A quorum for business purposes shall be fifteen Fellows.

## DECORUM.

VIII. No remarks reflecting upon the personal or professional character of any Fellow shall be in order at the annual meetings, except when introduced by the Council.

## ASSESSMENTS.

IX. Every Fellow shall pay in advance the sum of fifteen dollars annually.

Any Fellow whose subscription shall be more than nine months in arrears shall be reminded of the fact by the Treasurer in writing: in event of payment not being then made, he may, on vote of the Council, be dropped from the Society.

Each Fellow shall pay on admission an initiation fee of twenty-five dollars.

Any Fellow who shall neither attend nor present a paper for three successive years shall, unless he offers an excuse satisfactory to the Society, be dropped from fellowship.

## AMENDMENTS.

X Any of these By-laws may be amended, repealed, or suspended, by a two-thirds vote of the Fellows present at any meeting, *provided* previous notice in writing has been given at the annual meeting immediately preceding the one at which the vote is to be taken.

PAPERS  
READ AT THE  
SIXTEENTH ANNUAL MEETING  
OF THE  
AMERICAN GYNECOLOGICAL SOCIETY,  
HELD IN THE HALL OF THE  
COLUMBIAN UNIVERSITY,  
*Washington, D. C.,*  
SEPTEMBER 22, 23, AND 24, 1891.





## THE PRESIDENT'S ANNUAL ADDRESS.

BY A. REEVES JACKSON, M.D.,

*Chicago.*

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GENTLEMEN : A little more than fifteen years ago, in the centennial year of the independence of this nation, a number of men assembled in the hall of the Academy of Medicine in the city of New York, for the purpose of founding and forming this Society. There were nineteen present on that important and memorable occasion. They came from various parts of our country, in many instances personally unknown to each other, drawn together for a single common purpose—the advancement of scientific medicine in its relation to the diseases, accidents, and infirmities of womankind ; and, incidentally, to establish and foster a closer professional and social intimacy than had before existed among them.

Of that pioneer band of earnest men only thirteen remain ; the other six have departed this life and have gone to their eternal reward.

The last of the number for whom we have to mourn is the lovable and beloved Fordyce Barker, who passed away from the scenes of his earthly labors, full of years and honors, on the 30th day of May last.

It is neither my purpose nor my function to do more than thus officially announce this sad event, although I, in common with others, feel that in the death of Dr. Barker I have lost a valued personal friend. The duty of recording his work and his virtues has been assigned to one who is eminently qualified for the task—the originator of this Society, of which

Dr. Barker was one of the foremost Fellows and its first presiding officer, his friend and confidant—Dr. James R. Chadwick. But, while he may give utterance to our sorrow, it is ours, as we come together here, with bowed heads and memories draped in mourning, to plant the yew, the cypress, and the weeping willow, in sad and fond remembrance of our departed brother.

Likewise, it becomes my duty to announce the recent death of Dr. David Humphreys Storer, an Honorary Fellow of this Society, at Boston, Mass. And still more recently there has occurred in the same city the death of Dr. George H. Lyman, one of the founders and for several years a prominent and highly useful Fellow.

During the period which has elapsed since the beginning of this Society, it has passed through many experiences other than those marked by the decease of its members. Moved by surrounding and internal influences it has undergone many changes of tone and temper in regard to some of the scientific problems with which it came face to face at that time. Of these it may be said, that some progress at least has been made in the direction of settlement, and this is perhaps as much as can be fairly said of any questions which involve scientific and ethical considerations.

Mankind is slow to learn. There is a limit, usually soon reached, to the knowledge attainable by an individual, a community, a generation. None may hope for the attainment of absolute truth in art or science, or any department of human research. Such possession is only for Infinity. It is man's mission to seek for it, but, being man, it is also his destiny to fail in his search. One may valiantly struggle, and may ascend height after height, and after the toil and sweat of the effort he must cease his labors, lay down his trophies and abandon the strife. If, by diligence and earnest effort he should succeed in progressing toward the unreachable goal; if he should approach nearer the shrine than those who have

journeyed before him, he may justly feel content. Many fail to do so much as this.

In his old age Goethe said, "I have been fifty years learning to read, and I have not learned yet." Newton, after all his achievements in knowledge, exclaimed, "I have only picked up a few pebbles on the beach of the infinite ocean of truth."

History is a teacher whose lessons are not always understood by her pupils; and even when understood are not always heeded. If it were otherwise, there would be no occasion for their so frequent repetition. History *must* repeat itself, because of our dulness and our slowness to learn.

If we understand that every attempt to add to the world's accumulation of knowledge, even though the attempt be a failure, goes to make up what we call history, then we must admit that medical history has been making giant strides during the past few years. And one lesson which has been taught us, over and over, in the most unmistakable manner, based upon most unquestionable evidence, is that, from the beginning, medical science has been obscured and hampered by an enveloping mantle of error—error of observation and judgment; and the pathway over which its votaries have travelled is strewn with the remains of dead and dying delusions, many of them once as seductive and dazzling and as full of vitality as electricity is to-day.

Colton has said, "It is almost as difficult to make a man unlearn his errors as his knowledge." It is more so. For "ignorance is a blank sheet on which we may write, but error is a scribbled one on which we must first erase. . . . Ignorance has no light, but error follows a false one. The consequence is that error, when she retraces her footsteps, has further to go before she can arrive at the truth, than ignorance."

The fallacies and delusions which dominated medical belief in the past did not suddenly sicken and die. Error is never renounced abruptly. One does not let go the old ideas at

once; time is always an element of change in the domain of human opinion. Indeed, when the new idea is grasped, the hold on the old one is at first only relaxed, not abandoned. A prudent man, walking in a doubtful place, does not lift the foot which is securely planted until he feels sure of the firmness of the spot upon which the other is placed.

Is there reason to believe that we of to-day are less easily deluded than our predecessors? It is true that we no longer acknowledge the efficacy of Perkins' tractors, or the healing virtues of blue glass, or of eundurango, but has there been a lack in very recent times of testimonials from distinguished men asserting the curative power of Séquard's animating and rejuvenating juice, or of sulphuretted hydrogen per rectum, and tuberculin per syringe for tuberculosis?

As we grow older it may be sometimes interesting, although not always pleasant, to look back upon our discarded follies. Not because such retrospect can do us any great good, and not because our humiliating experiences will benefit those who are coming after us, for very rarely indeed is a man found who is willing to profit by the mistakes of others; and not very infrequently there is found one who does not profit by his own.

I purpose to refer briefly to a few of the changes of opinion and practice through which some of us have passed.

Not to go so far back as the days when "ulceration of the womb" was considered the head and front of pelvic offending; when a stick of nitrate of silver, a speculum, a Simpson's uterine sound, and a pessary or two constituted a gynecological outfit—although such a review would not carry us very far—we all have a vivid recollection of the womb-splitting delusion, during the continuance of which the only question concerning the matter related to the direction of the split, whether it should be backward, forward, or on both sides. There was no frivolity about that treatment; it was terse and vigorous. Favorable results were claimed and urged as the consequences of it. Women were reported as relieved of backache, dysmenorrhœa, flexions, and misplacements. Many

ingenious and business-like instruments were designed and used for the purpose of performing the prevailing operation. One surgeon claimed, I believe, to have done it more than five hundred times, and he was still at work. The great leader in this movement had a large following, and the number of women subjected to the procedure ran into thousands. Soon, the fact came to light that metritis and other forms of pelvic inflammation had occurred in some instances, that death had resulted in some others, and that many of the women who had been reported relieved or cured were very soon suffering as greatly as before. The scales began to fall from the blinded eyes, and slowly the delusion was dispelled.

But another was ready. Thomas Addis Emmet accidentally discovered that, in a case of long-standing pelvic disorder which had unreasonably resisted various usual methods of treatment, there was an extensive laceration of the cervix uteri, permitting such a degree of eversion of the cervical lining membrane as to cause constant irritation of the delicate glandular structure of the interior. He devised an operation for the restoration of normal conditions, with a most successful issue. Case after case followed, and the results were so gratifying that, when the history of a number of them had been published everybody was on the lookout for uterine lacerations; and, inasmuch as one could be found in nearly every woman who had borne a child, material was abundant. Thousands of women with backache and leucorrhœa were subjected to a surgical operation which, in many cases, they were in no more need of than were their husbands. The essential features of the cases needing operative measures as defined by their author were disregarded, and the enthusiastic seeker for something to cut and stitch rarely failed to find it. The most insignificant change of shape in the os uteri was excuse enough for an operation. Ailing women came to feel neglected if an operation were not performed for them, and they changed their doctor sometimes in order to get one who had operated on their neighbors.

The abuse, like most others, worked its own cure ; and now the procedure, a most beneficent one in suitable cases, is becoming restricted within proper limits. But, as extremes beget extremes, there may be danger here, as has happened before, of the pendulum swinging too far the other way.

During the lifetime of this Society a still more important change than those I have mentioned has taken place ; or, more properly speaking, is taking place in gynecological practice. It began before our Society did. The seed had been sown, and had germinated, and the plant gave promise of vigorous growth. Barker saw danger ahead in the evident tendency to an almost exclusive surgical treatment of the ailments of women, and he made an attempt to stem the current in his excellent paper on "Medical Gynecology,"<sup>1</sup> in which he showed how much ought to be done, and how much could be done by the judicious and patient use of non-operative measures. But his implied protest was insufficient. Thoughtful men gave heed to his prudent counsel, but stronger influences were at work, and a surgical era in gynecology was entered upon far more comprehensive than the world had ever before seen. Prior to that time there were recognized a few functional disorders among women that were thought to be capable of amelioration by means of drugs and diet, and an observance of bodily and mental hygiene. But the frequent failure of these milder therapeutic measures, even when their employment was directed by judgment, skill, and patience, furnished an additional impetus to the growing tendency to radical remedies.

Our Fellow, Dr. Robert Battey, holds a very close relationship with this movement ; not, I am glad to say, a discreditable one. He had observed that in many instances the most patient employment of tonics, hot vaginal injections, local medicinal applications, rest, massage, and hygienic measures were insufficient to permanently relieve the pelvic and dorsal pains, the menstrual disorders, and the mental and

<sup>1</sup> Transactions, vol. ii., 1878.

nervous accompaniments of chronic pelvic disorder. He had further observed that many of the women thus afflicted only ceased to be invalids after the menopause. In view of these facts, he proposed and practised the removal of the ovaries for the purpose, and with the intention of artificially and prematurely determining the "change of life." He exercised the utmost care in the selection of cases for the operation, choosing only those in which he had satisfied himself of the insufficiency of all milder available means. In some instances these latter were assiduously employed for years before he consented to operate, his conduct in this respect affording a marked contrast to that of his more enthusiastic and less patient disciples, who think they have "tried everything" when they have put their patients in bed and ordered them to use hot vaginal douches for a fortnight.

The work of Dr. Battey marked an epoch in gynecology. He found that in the cases operated upon by him the ovaries and tubes were diseased in greater or lesser degree, and that their removal was in many instances followed by cure of the patient; but this discovery left room for uncertainty as to whether the cure was the consequence of the removal of diseased organs, or of the induced menopause. At about the same time, Lawson Tait and Hegar were working in almost the same line, with the difference that they insisted upon the necessity for the simultaneous extirpation of the tubes with the ovaries. In a short time the example of these men was followed by a host of imitators in almost every land. That which followed is fresh in our memory. Soon, our literature began to teem with reports of the most aggressive surgical operations. Ovaries, Fallopian tubes, and uteri were removed for the relief of all symptoms referable to these organs, or to their locality, at first after failure of other treatment, but by and by, and frequently, without other means having even been tried. Men were seized with a sort of mania for extirpating the female pelvic organs. The right of tenancy in the pelvis of its owner was denied to any organ which was

the seat of persistent pain or other disorder. An aching tooth was accorded far greater privileges. The offending organ—and sometimes its neighbors—was summarily evicted. Within a few days, in some instances within a few hours, the exploit was reported—provided the patient survived the operation. Not infrequently the only report made consisted in the statement that the patient had recovered, as though the aim and purpose of the operator were to show that the thing could be done without killing.

Operators, eager for fame, found willing victims for mutilation on every hand; papers with grimly suggestive titles—"My First Ten Cases of Oöphorectomy," or "My Year's Work in Laparotomy," etc.—were read at meetings of societies, to be followed by their publication in medical journals. No society meeting was considered quite complete or interesting unless its proceedings were enlivened by the presentation of an assortment of ovaries and tubes served up on platters for the delectation of those present.

In many cases these anatomical specimens showed undoubted evidence of the existence of sufficient disease to justify the operation which had been made for their removal. But in a far larger number there were no such evidences; and we began to hear of a new set of justifying terms, as "cirrhosis," "commencing degeneration," "tendency to cystic disease," etc., the latter meaning no more in some instances than a demonstration of the fact that Graafian follicles were present in various stages of development. A great abuse had grafted itself upon an occasionally useful and necessary procedure.

The extent of this abuse can hardly be estimated. Ovaries were removed for the slightest ailments, in many cases where there were no pelvic symptoms whatever.

At a meeting of the New York Pathological Society, held October 12, 1887, there was related the case of a woman fifty-one years of age, who had ceased menstruating one year before. For several years she had suffered from pain in the region of the spleen, and an exploratory incision of the abdomen was



recommended and performed. The spleen was found to be healthy, and it was permitted to remain ; but it was discovered that she had two ovaries with corresponding tubes, and although there was nothing abnormal about either of them they were promptly removed. The reason for this was obscure, unless it be viewed in connection with the question gravely propounded by the operator at the close of his report, namely, "How much good can be done by the removal of the tubes and ovaries after the menopause?" The operation was done on the day immediately preceding the report, and although sufficient time had not elapsed to determine how much good it had done in this particular instance, it must have been gratifying to all concerned to know that the patient was "doing well."

I knew a patient, eighteen years old, who had a facial neuralgia and a moderate degree of dysmenorrhœa. She entered one of our hospitals and after remaining there a few days was bereft of her ovaries. I saw the specimens at the next meeting of a medical society. The reporter stated that prior to the operation everything had been unsuccessfully tried. There was no disease apparent in the extirpated structures. The patient recovered, and the case subsequently appeared in the list of "cured" in the series which the operator was then constructing. Six months after the operation I saw the patient again. She was still menstruating with the usual regularity and the usual amount of pain, and she deeply regretted the irrevocable and uncompensated loss she had sustained.

Does not all this justify a remark made by Thomas Keith (*British Medical Journal*): "In abdominal surgery responsibility seems to have become old-fashioned and gone out of date."

I do not consider a desire to achieve scientific fame an improper ambition or necessarily injurious; but such a desire when it becomes overweening, when it is not governed and held in check by an unselfish honesty of purpose, may,

in our imperfect mental organizations, lead to unworthy methods. Disguise it as we may, the law of living is selfishness, and we all find it easier to think well than to do well. The effort to attain distinction prematurely by a cross-cut is a rock upon which many have split.

A story told by Professor Huxley in a letter to the *London Times*, more than a year ago, contains a moral much more applicable to our own days than to those of which he was speaking. "When I was attending the meeting of the British Association," he says, "in Belfast, nearly forty years ago, I had promised to breakfast with the eminent scholar, Dr. Hincks. Having been up very late the previous night, I was behind time; so hailing an outside car, I said to the driver, as I jumped on, 'Now drive fast; I am in a hurry.' Whereupon he whipped up his horse and set off at a gallop. Nearly jerked off my seat, I shouted: 'My good friend, do you know where I want to go?' 'No, yer honor,' said the driver, 'but anyway I'm driving fast.'"

It is certainly not the spirit of our age to drive slowly; but it is undoubtedly better to drive slowly in the right direction, or even to stand still, than to go at breakneck speed in the wrong way. Activity, while usually preferable to idleness, is not always so; it may be dangerous. It is better to let a field lie fallow than to sow it with weeds.

Now, in view of the fast driving, of the unchecked recklessness and unreasonableness which have characterized the indiscriminate radicalism to which I have referred, does it seem strange that honest, thoughtful men should, in the name of science and humanity, raise their voices in protest? And is it wrong for them to ask that the driving be slower, at least until we know our destination? In the famous words of Davy Crockett, they say: "Be sure you are right—then go ahead."

This conservative attitude has not always met with the consideration to which it is fairly entitled. Perhaps it has not always been understood. To those who have been

guilty—and I use the word advisedly—of needless, useless, injurious surgery, it points the finger of adverse criticism and voices an arraignment of this sacrificial work. On the other hand, it has nothing but commendation for the hundreds of brilliant surgical operations undertaken for the removal of purulent collections and other organic diseases, which from their nature could not be rationally dealt with in any other manner. No one doubts the propriety of the most prompt and thorough surgical treatment in cases such as these.

But when important organs are removed for vague symptoms of doubtful etiology, on the mere chance that benefit in some inscrutable way may follow; when certain injury is done without reasonable expectation of any good result; when, for example, ovaries are extirpated for general neuroses—epilepsy, hystero-epilepsy, nymphomania—diseases in which those organs only share in the central trouble, and in which castration cannot give permanent relief (Brodwitz), then conservatism says to the mutilators, “Have a care—drive slowly.”

True conservatism in medicine implies saving of life, by the least dangerous methods, without mutilation if possible; and it never seeks to avoid efficient means of treatment. To treat tentatively any diseased condition which time only makes worse; to attempt to disperse a pelvic abscess or a cystic ovary with electricity, or hot vaginal douches, or massage, or drugs, is mere senseless trifling. So-called Christian Science would do as well. This is not conservatism; it is malpractice. In the matter of the treatment of disease conservatism demands the best and the safest. But it has been misrepresented and its advocates unfairly attacked. A brilliant and successful operator, and one who withal is a vigorous writer,<sup>1</sup> has said: “To a man these ‘conservative’ men are without experience. If they have attempted radical surgery they have failed and abandoned it on that account.”

<sup>1</sup> Joseph Price, M.D., *Medical News*, June 14, 1890.

Is this statement quite true? Would the writer seriously assert that Thomas Keith, for example, was without experience or had been a failure as an operating surgeon? And yet Thomas Keith is an advocate for the use of electricity in the treatment of uterine fibroids—a disease in the surgical treatment of which he had no peer. Flippancy in argument is likely to weaken even a strong cause; it is capable of destroying a weak one.

No one doubts that very much unnecessary and reckless surgery has been performed; the most impulsive operator does not deny that such work has been done—by others. And is there then no need for conservative appeal? Is it of no importance to avoid dangerous methods when it can be done safely? Every surgical operation involves danger. The danger may not be great in some of them; but even a moderate degree of peril should not be incurred for the possible relief of conditions which at most produce only discomfort. It is worse than a surgical error—it is a surgical crime—to perform a serious mutilating and dangerous operation which may be avoided by other, safer treatment. The most audacious radical would scarcely allege that a vast majority of the special ailments of women are incapable of recovery without removal of her peculiar organs. Why not afford the opportunity? No one can say in advance what may or may not be effected by the use of judicious non-operative measures. Do we not all know of scores of ovaries and tubes which have been sentenced to banishment and which have been saved to their owners, and the latter restored to health and sexual usefulness by conservative means? When, therefore, a surgeon shall unhesitatingly doom these organs to removal, unless in some cases of evident organic disease, there is implied a consummate knowledge which is egotistical and unjustifiable.

The abuses of gynecological practice do not always reach the plane of grave surgical procedures. Far short of these great harm may be done. Especially to be deprecated are

the much too frequent pelvic examinations of unmarried girls and women. This abuse is wide-spread, and a very grave responsibility must rest upon the physician who subjects this class of persons to unnecessary investigation of the sort referred to.

Not very long ago I was informed by a highly intelligent woman who had resided several months in a large sanitarium situated in one of our Western States, that it was not unusual for girls from thirteen to fifteen years of age to be regularly under treatment by means of vaginal tampons and douches because of menstrual derangements—the slightest pelvic pain and discomfort being considered sufficient reason for such practice. Frequently she was pained and shocked by hearing the screams of some of these young victims who were obliged to submit to the introduction of the speculum. I might have felt some hesitancy in giving full credence to the statements concerning such outrageous practices had they not been corroborated by a nurse who had resided two years in the same institution, and who said further, that in the case of almost every female patient who entered, without regard to the existence of pelvic symptoms or the patient's age, a physical examination was demanded and frequently insisted upon.

What effects might we reasonably expect from this conduct upon the *morale* of girls just entering into young womanhood? Would any of us be likely to suggest measures of this character for our maturing daughters?

The hasty resort to instrumental and operative means which has so taken possession of us has largely diverted our attention from what may be called the *imponderables* in medicine. We are no longer quite satisfied to consider any etiology which is not based upon the revelations of the microscope. If we cannot discover a germ for a headache we feel that we are hardly in a secure position to pronounce a diagnosis or to institute treatment.

Yet very many persons are in need of our kindest sympathy and care, whose stories are made up of their emotions,

disordered ideas, and abnormal sensations, and in whom we shall vainly search for the essence of their ailments in thorax, abdomen, or pelvis. May not patients of this class suffer as greatly, in body and mind, as others who may possess an ovarian cystoma or a pelvic inflammation? There are many expressions of disease which cannot be weighed and measured, felt and seen, objectively. Life is a mysterious thing, and no more mysterious when its manifestations are disordered than when normal.

In May, 1890, the Paris correspondent of the *Medical Record* gave an account of a series of discussions which took place in that city upon the comparative merits of curetting and intra-uterine cauterization for the cure of endometritis. Each of these methods had earnest advocates. A third group of surgeons considered the use of both of these means only a waste of time, and advocated laparotomy and hysterectomy. Incidentally, the treatment of other uterine maladies was considered, and throughout it all no allusion whatever was made to the general treatment of the patients--as though there were no important sympathetic connections between the uterus and other parts of the body. This is the legitimate though unfortunate result of basing gynecological science upon an undue surgical and operative foundation. And it further shows that in all the medical world patience seems to have become a lost virtue.

Professor Hebra, of Vienna, is credited with saying: "It is necessary that there should be surgical geniuses, but do not ever let a surgical genius operate on you." The advice would have been safer and more pertinent if he had said: "Never let a surgical genius decide upon the necessity for an operation," for the work of such a person is likely to be better than his judgment.

I have no desire to take advantage of my present position to say anything which I would not say elsewhere, or under other circumstances. But there is a matter upon which I feel earnestly and disapprovingly, and I speak of it here because

there is occasion for doing so, and it can be done in an impersonal manner. I allude to the practice of publishing hasty and immature reports of surgical work. Other work, of more modest character, requiring more patience, sometimes more skill, which is frequently more useful and more scientific, is not usually deemed worthy of report because it lacks the greater brilliancy of cutting. The reports to which I refer are, as a class, very often of no value whatever except to let the world know that the operator has been doing something; and usually this is a matter about which the world is supremely indifferent. In order that medical and surgical experiences should be of scientific worth it is necessary that the results should be sufficiently numerous and sufficiently mature to permit Time, the prover of all things, to have an opportunity.

I invite the attention of the Society to this matter because I wish to enlist the influence of its Fellows against an improper and much too prevalent custom. Besides the evident impropriety of the practice, progress in medical science is impeded by immature announcements of results. We all know how easy it is for others to be mistaken. And, unless we are willing to concede that we are more infallible than the others—which some are doubtless willing to do—we ought to know that, with the best intentions to be accurate in our observations, we are often misled by them. An observation imperfectly or inaccurately made, may be corrected by subsequent experiences, and, by and by, the patient and conscientious investigator may be able to rectify early erroneous impressions, and arrive at a candid judgment. But when neither patience nor conscientiousness are taken into the service; when a single fact or a small number of facts can be made to falsely represent a general law, great harm may come to the cause of scientific advancement. There is a sophistry in the facts themselves when they are used, or rather abused, in this manner.

If the disadvantage of such erroneous methods ended with the individual observer, the resulting harm would be minim-

ized. But when fallacious and partial conclusions are published broadcast, immense injury to truth and science may ensue. Still further, when such publication be made under the sanction of a representative society, such as this, the damaging influence must be greatly increased. Hence, the supreme importance of a strict censorship over the admission of material for our volumes of *Transactions*. I am aware that in every one of these it is stated that the Society does not hold itself responsible for the views of its members; but it cannot in this way renounce or be released from its responsibility. A society is what its component parts are; and the influence which it exerts must be the combined influence which is exerted by its members. The papers which are presented to this Society, to become embodied in its *Transactions*, are understood to be prepared with more care, and to represent more matured judgment than those which appear in more ephemeral channels. This fact, while it is gratifying, imposes upon each one of us an increased responsibility; and, at the same time, it should be an incentive to the very best work of which each member is capable. No one has a right to lower the high standard which we have attained as a Society, if he has the ability to maintain it.

Furthermore, membership here should deter every Fellow from doing anything without the Society which might not properly be done within it.

I sometimes fancy that, as members of a community, we lose sight of our personal accountability. Whether we think of it or not, we are constantly imprinting ourselves upon our fellow-creatures by our examples and our lives. We can no more avoid this than the sun can withdraw his rays from the earth, or the flowers hide their beauty from the eye of man. Though our influence be unconscious, it is the inevitable result of our characters, which we have been building up, stone upon stone, all our lives. So, whether by direct or indirect action, whether by simply living or by earnest striving, we are, every one of us, making the world better or worse, happier or more



miserable, nobler or meaner, purer or more corrupt. Personal influence is the heritage of all ; no one can shake it off ; no one can escape its obligation. It is like an atmosphere, which all combine to create, and which everyone must inhale. Let us see to it that our contribution to this common air give to it something of sweetness and purity, and that the world shall be somewhat brighter and better for our passing through it.

What of our future? The present status of our Society is conceded to be a high one. But may it not be higher? The outlook is surely hopeful. No reason is apparent why our course should not be in the future, as it has been in the past, onward and upward. With the annual infusion of new blood must come new vigor. With improved nutrition there should come improvement in method and manner of thought and action. Social organizations, like living organisms, grow by what they feed upon. We should grow better as we grow older. Already there are evidences among us of a more healthy tone of professional opinion and practice in regard to some of the questions that have agitated and divided us. We may expect this thoughtful wave to broaden and deepen. Why may there not come a sort of millennium, when vaulting selfishness shall no more occupy the place of a generous altruism ; when men shall be more ready to speak of the good works of others than of their own ; when impulse shall give way to deliberation ; and there shall be a willingness to patiently weigh testimony and await the verdict? In short, when virtue shall have everything her own way, and the adversary of souls shall find his occupation gone. In that millennial day when Truth's errant-knight, returning from afar, shall call to the sentinel guarding her palace,

"Watchman, tell us of the night,  
What its signs of promise are,"

The jubilant answer shall come, laden with implied hope,

"Traveller, o'er yon mountain height,  
See that glory-beaming star."

## THE ADVANTAGES OF MIXED NARCOSIS IN GYNECOLOGICAL SURGERY.

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WHILE immense benefits have resulted to general surgery from the introduction of anæsthetics, without these agents gynecological surgery would scarcely exist. It is true that ovariectomy was first performed and a number of times repeated before they were discovered, yet it is safe to say that without the power of rendering patients unconscious, this operation would be very rarely performed, and a long list of abdominal and plastic operations would be impossible of execution.

There are peculiar features attached to many operations, which the gynecological surgeon is daily called upon to perform, which require, even demand, a most profound abolition of sensation and a steady maintenance of this condition. These features may be briefly enumerated: 1. The length of time required for many operations. 2. The necessity for absolute quiet of the patient. 3. The great sensitiveness of the parts involved in certain plastic operations. 4. A profound impression upon the sympathetic nervous system, as when the hand is passed into the abdominal cavity or a large tumor suddenly raised from it. Under such acts the pulse is frequently observed to be markedly affected. 5. The dependence of the success of the operation and even the safety of the patient upon absence of vomiting. If now there be any method by which the ordinary anæsthetic condition can be made more

profound, can be more steadily maintained, and so modified as to meet the points stated, it certainly merits consideration and adoption. Such a process exists, I maintain, in the combination of narcotics with anæsthetics, and the claims of this method are presented to you, because it is believed that its merits are far from being duly appreciated, and that while it is now only occasionally resorted to it deserves to be the regular practice.

The method is designated "mixed narcosis," and consists, as it is now understood, in the administration of a hypodermatic injection of morphine and atropine before the anæsthetic, whereby the effects of these agents are superadded, and the course of the anæsthesia is in a certain degree modified. The process originated with Nussbaum, 1863, and Bernard, 1864. The former, fearing a too protracted administration of chloroform during a prolonged operation, injected a solution of morphine to keep up the unconscious condition. The latter resorted to the same process in dogs under experiment, and without being aware of Nussbaum's resort to the method. Both were pleased with the results obtained, but while Nussbaum did not pursue the subject Bernard continued it, and soon found that he lost a far less number of animals under chloroform when morphine was given, and demonstrated the possibility of performing operations under the combined effects of the two agents which were not practicable under either alone. Bernard discovered also that the benefits were more pronounced when the injection of the narcotic preceded by some little time the administration of the anæsthetic. By his numerous observations and experiments he placed the method upon a scientific basis and laid it before the profession, first in the journals and more fully in his work on anæsthetics published in 1875.<sup>1</sup>

The addition of atropine was a later step. It began with

<sup>1</sup> *Leçons sur les Anesthetiques et sur l'Asphyxie.*

Harley, who, in a series of articles upon this agent in 1868,<sup>1</sup> and in his work on *The Old Vegetable Narcotics*, 1869, taught the value of this agent as a cardiac stimulant and that a subcutaneous injection of it is the most appropriate remedy in all conditions where there is depression of the sympathetic nervous system, as in syncope, asthenic shock, and in failure of the action of the heart under chloroform or any other cardiac paralyzing agent. Harley was closely followed by Bartholow,<sup>2</sup> who distinctly recommended an injection of morphine and atropine before the administration of chloroform, "not only to prevent the after effects, but to obviate the dangers of the inhalation itself." Influenced by these teachings, and by the knowledge then recently gained of the modifying effect of atropine upon the action of morphine, I began the practice of injecting a solution of these two narcotics before administering an anæsthetic for all severe or prolonged operations. The exact date of my first resort to the method I cannot give. My first publication upon the subject, containing a report of an ovariectomy under it, was in 1876,<sup>3</sup> and I had then been following the practice "for six or eight years." Justice demands this explicit historical statement since the publication of Dastre's treatise on anæsthetics.<sup>4</sup> This author claims this method as his own and heads the chapter on it, "The mixed method: procedure of Dastre and Morat." He is a warm advocate of the method, and closes with the statement that "It is consecrated by ten years of trial in the laboratory without a single check, and by eight years of practice in the hospitals of Lyons." This testimony is not only satisfactory, but gratifying, to one who has resorted to the method for every operation of moment during a period of more than twenty years.

The amount of narcotics given by subcutaneous injection

<sup>1</sup> Med. Times and Gaz. ; British Med. Jour.

<sup>2</sup> Prize Essay, Amer. Med. Assoc., 1869.

<sup>3</sup> Amer. Journ. Med. Sciences, April.

<sup>4</sup> Les Anesthésiques. Paris, 1890.

before anæsthesia, is : of sulphate of morphine from one-sixth to one-fourth of a grain, of sulphate of atropine from one one-hundred-and-sixtieth to one one-hundred-and-twentieth.<sup>1</sup> I usually give from six to eight minims of a solution containing sixteen grains of morphine and one-half grain of atropine to the fluidounce.<sup>2</sup> It must also be stated that the anæsthetic constantly used by me is the A. C. E. mixture,<sup>3</sup> and it is by this combination of narcotics and anæsthetics that my personal experience with the method has been made.

Setting aside all theoretical considerations, I would present the following results which clinical experience has shown in favor of the method.

1. The emotional excitement of the patient is allayed. By the morphine dread and apprehension are blunted, and the nervous system yields readily and kindly to the anæsthetic.

2. Anæsthesia is more readily and pleasantly induced by abbreviation and amelioration of the stage of excitement.

3. There is a sense of suffocation attending the inhalation of ether and all mixtures containing it, which is very distressing. This unpleasant feature is lessened by the influence of the narcotics, because the time necessary for the induction of anæsthesia is briefer. I have had several female patients whom I have anæsthetized for examination and afterward for operation, who have borne strong testimony in favor of the mixed method.

4. Anæsthesia is not only more readily produced, it is far more steadily maintained. For plastic operations this is a point of no small importance. Absolute quiet of the patient is a marked feature of the mixed method; I have rarely seen a patient move a limb or even a muscle during prolonged abdominal operations. Bernard, upon this point, says that the dogs became "living cadavers" under his hands. He

<sup>1</sup> Morphine, 0.0108-0.0162; atropine, 0.0004-0.0005.

<sup>2</sup> Morphine, 1.0368; atropine, 0.0324; water, 29.572.

<sup>3</sup> Alcohol, one part; chloroform, two parts; ether, three parts, by measure.

could by this method tie the lingual artery deep in the throat, which he could not do with chloroform alone. Dastre says that the absolute calm under this method is such that the observer is tempted to ask if the subjects of operation really breathe and live.

5. A period of quiet rest and freedom from pain succeeds the operation. I am aware that of late the influence of opium after a severe operation has been held to be deleterious. It is a doctrine to which I cannot assent; certainly a single dose cannot be very injurious, especially when it secures hours of freedom from pain after a severe operation.

6. Vomiting, so deleterious in many ways, and sometimes so dangerous after operations, is lessened. The amount of vomiting after anæsthesia varies very much in different subjects, and its occurrence depends upon several factors. Idiosyncrasy probably has something to do with it; certainly the amount of the anæsthetic inhaled has an important influence. If the induction of anæsthesia has been slow, and the tissues generally have been steeped with the agent employed, the stomach will be called to assist the more natural channel of elimination, the lungs, and vomiting will be continued for many hours. But this point does not depend upon theory alone or upon a few observations. Brinon made it the subject of clinical study, and found that vomiting was present after anæsthesia with chloroform in 38.61 per cent. of the cases, after chloroform preceded by morphine in 26.31 per cent.<sup>1</sup> I have very rarely seen a case of severe vomiting after mixed anæsthesia.

The question of danger takes precedence of everything else relating to anæsthetics. Is the danger increased by the combination of the effects of narcotics with anæsthetics? That any process can be absolutely safe which abolishes all sensation and all consciousness, leaving of vital actions only respi-

<sup>1</sup> Recherches sur l'Anesthésie chirurgicale obtenu par l'action combinée de la morphine et du chloroform. Paris, 1878.

ration and circulation, is, *à priori*, in the highest degree improbable. Unfortunately, all experience thus far sustains this. Each and every anæsthetic, even nitrous oxide, has its mortuary list, and it could not be expected that the method under consideration should prove an exception. I have succeeded in finding reports of but three deaths under it. In one, a grain of acetate of morphine was given subcutaneously before chloroform—an amount of the narcotic hazardous in itself—and death was by narcotism. More recently two others are given in the proceedings of the Surgical Society of Paris. Several surgeons had resorted to the method upon Dastre's strong recommendation, and these accidents were reported. In the debate the opinion was expressed that "the mixed method lessened the reflex risks, but aggravated those toward the end."<sup>1</sup> No clinical proof of this statement was furnished. In neither of the three cases was death typical of that from anæsthetics, *i. e.*, by sudden failure of cardiac action, or of respiration, or of both simultaneously.

So little has been published upon this subject that not much testimony can be adduced. Yet we have upon the other side the experience of the surgeons of Lyons, as given by Dastre.<sup>2</sup> Gayet extols it highly in ophthalmological surgery, on account of the absolute quiet obtained by it. He says: "The results have been excellent. The number of cases amounts to several thousands without an accident." Aubert says: "I really know nothing preferable nor more practicable. The advantages of the method are: 1st, safety; 2d, the great rapidity with which anæsthesia is effected; 3d, the absolute quiet of the patient; 4th, facility of awakening; 5th, simplicity of after-effects, the *malaises* and vomiting."

My own experience with the method has been one unbroken

<sup>1</sup> This statement is reiterated in the latest English treatise on surgery—Moulin's. But this writer can scarcely be held as an authority on anæsthetics, since he states that the A. C. E. mixture consists of *equal parts* of its constituents.

<sup>2</sup> *Op. cit.*

by accident or any appearance of danger. It extends over a period of more than twenty years. I have resorted to it for all kinds of operations and with patients of all conditions and ages, except young children. Three times I have seen dangerous symptoms with the A. C. E. mixture, and with one of them, an adult male, the alarming condition continued so long that the case seemed hopeless. Within a few weeks it was necessary to repeat the operation upon this patient; I adopted the mixed method, and had no disturbing symptom. My confidence in this method was such that I approached the administration with no more than ordinary anxiety. This experience is presented with a full appreciation of the insignificance of any individual experience as to mortality under anæsthetics, unless under very exceptional circumstances. Nevertheless, no man can fail to feel the strength of convictions derived from the observation of a lifetime.

The method is not presented as one of absolute safety, but as one in which there are elements of safety not present in ordinary artificial anæsthesia. Permit me to present the foundations upon which firmly stands, I believe, the doctrine that the mixed method is less dangerous than ordinary anæsthesia.

1. *The absence of emotion.* Without assenting to the doctrine that the greatest part of the danger under anæsthetics is from this source, I am sure that fatal accidents have occurred from emotion, and from this cause alone.

2. *The much smaller quantity of the anæsthetic required.* This point was remarked in experimental physiology by Bernard. Dastre states that he has continued complete anæsthesia in animals with a quantity of chloroform twenty times, thirty times less than by this agent alone.<sup>1</sup> Brinon's clinical observations showed a diminution of chloroform given in a series of cases of from one-third to one-half. While danger does not necessarily increase in direct ratio with the amount

<sup>1</sup> Op. cit., p. 266.



of anæsthetic administered, still the importance of continuing the process with a minimum quantity of the agent, especially in prolonged operations, needs no emphasis.

3. *The shortened and diminished violence of the struggling stage.* That this period is one of especial danger has abundant clinical proof from the many sudden deaths that have occurred during it, and that whatever diminishes the violence of this stage diminishes danger admits of no doubt. I have seen several marked contrasts between simple and mixed anæsthesia in the same patient. In one case, a vigorous and muscular young man, an anæsthetic was first administered for exploration of a traumatic stricture. The struggling was so violent and so prolonged that he could scarcely be controlled, and only with difficulty could the friends be induced to allow the administration to proceed. The mixed method was subsequently resorted to for the operation, and he went under as kindly and gently as could be desired. Mollow gives strong affirmative testimony upon this point.<sup>1</sup> Brinon has also recorded his observations, which are to the effect that the stage of excitement was well marked under chloroform alone in 48.78 per cent. of patients, while under chloroform preceded by morphine, it was present in only 15.78 per cent. It is true that the stage of excitement is generally far less pronounced in females, the patients of the gynecologist, than in males, and often entirely absent; nevertheless, as bearing upon the safety of artificial anæsthesia, the point is too important to be omitted.

4. *The stimulating influence of atropine upon cardiac action and respiration.* This point rests upon the accepted doctrines of physiological therapeutics.

5. *The effect of morphine in lessening the liability to reflex inhibition of the heart.* Examples of death following instantaneously upon sudden painful peripheral impressions, as in tooth-drawing, division of a fistula, etc., are abundant. Under

<sup>1</sup> Nouveau Dict. de Méd. et de Chir. pratique, t. xxiv., art. Opium.

the influence of morphia these impressions are less sharply felt in case the anæsthesia is not profound.

6. *Experiment upon animals.* Bernard's experience with dogs has already been given, but Dastre's testimony upon this point is exceedingly strong. He says: "In the laboratory of the Sorbonne with chloroform alone we lost one dog out of every three, and, with the other two, there were often threatening accidents or irregularities in the anesthesia. During the past ten years (1878-1888) all the dogs have been anæsthetized by the mixed method and I have not seen one die in hundreds. I have always obtained an anæsthesia absolute, typical, complete, without agitation, with perfect resolution, and which could be maintained two and three hours without any danger."

In the whole range of the subject of anæsthetics, I know no testimony so strong, so convincing, as this.

Most of the experience with the mixed method has been with chloroform as the anæsthetic. The question remains for consideration, whether the combination of narcotics with ether is a safe and satisfactory method of producing artificial anæsthesia? The material upon which to base a reply to this question is very meagre. Kappeler gives the weight of his authority against it, based upon twenty-five cases, and Turnbull's opinion is adverse, although supported by few facts.<sup>1</sup> The occurrence of dangerous symptoms in a single case should not carry much weight, since "a severe and prolonged operation upon the brain" had been performed. A case of extreme danger from respiratory paralysis under this combination is reported in the *Annals of Gynecology*,<sup>2</sup> but no less than a grain and a half of morphia had been given within a few hours of the administration of the ether. Dangerous symptoms occurred in the case of an adult female,<sup>3</sup> and well they might, since the patient had previously several hypoder-

<sup>1</sup> Artificial Anæsthesia, 2d ed., Philadelphia, 1890.

<sup>2</sup> April, 1890, p. 346.

<sup>3</sup> Medical Record, September 2, 1882.

matic doses of morphine, amounting to nearly two grains, with twenty minims of tincture of opium. No arguments against the method can be based upon such cases as these.

Julliard, of Geneva, has very recently advocated the mixed method with ether<sup>1</sup>. He recommends a hypodermatic injection of one-sixth to one-third of a grain of morphine before ether in order to obviate the inconveniences and unpleasantness of this anæsthetic, finds that this calms the patient in a remarkable manner, and notably diminishes the amount of ether necessary, and speaks of no bad experience. He says, however, that there are individuals in whom a previous injection of morphine may increase the danger both of chloroform and ether, but adduces no evidence, either theoretical or clinical, in support of the statement.<sup>2</sup> He does not mention the simultaneous administration of atropine.

As with the combination of chloroform and narcotics I have not been able to find a case of typical anæsthetic death under ether and narcotics. Three fatal cases will be found in the appendix, and in all of them death took place some hours after the inhalation and with profound narcotism.

So far as my experience bears upon this question of the

<sup>1</sup> British Medical Journal, April 25, 1891, from Rev. Méd. de la Suisse Romande, February, 1891.

<sup>2</sup> Since this paper was read there has come to hand a "Discussion on Anæsthetics," held in the Medico-Chirurgical Society of Glasgow. The President, Dr. Macewen, expresses himself strongly against the combination of narcotics and anæsthetics. He says: "It must not be forgotten that morphine becomes intensified in its action in the presence of chloroform. I have seen  $\frac{1}{2}$  of a grain injected subcutaneously in a fairly healthy woman ten minutes before administration of chloroform produce profound narcosis, lasting for several hours after the completion of the operation, the patient exhibiting the opium-pupil." He also gives, upon hearsay testimony, a fatal case following  $\frac{1}{5}$  of a grain hypodermatically, death taking place eight hours subsequently.

The only comment to be made is that the general proposition as to the action of morphine being intensified by chloroform cannot be true, since, were it so, there has been experience enough with the method to have furnished many other examples, and certainly those of minor degree would have been frequently met with. Also, experiment with animals does not sustain this statement. Without further particulars the cases should not be accepted against the method.

combined effects of narcotics and ether, it will be remembered that the A. C. E. mixture, the anæsthetic I have always used, consists of one-half ether. I have seen no dangerous narcotism, nor the slightest indication of any other danger during the practice of a lifetime. The same can be said of St. Elizabeth's Hospital, where this method has been used since its foundation in 1876.

#### APPENDIX.

##### *Deaths under Chloroform and Narcotics.*

I. Case mentioned in Bernard's *Leçons sur les Anesthésiques*. Patient had one grain of acetate of morphine subcutaneously before chloroform. The symptoms came on some considerable time after the inhalation, and death was by narcotism.

II. A feeble girl, aged sixteen; operation on bones of the foot. One-twelfth of a grain of morphine and one two-hundred-and-fiftieth of atropine half an hour before chloroform. Symptoms came on after the patient had been carried to the ward and placed in bed. Death, after artificial respiration had been continued for half an hour.

III. Case of nephrectomy, patient a young female; operation lasted an hour. Death occurred at the end of an hour and ten minutes after the inhalation ceased, in spite of all efforts at rescue.

These two cases were reported at the Surgical Society of Paris. (See London *Lancet*, 1890, ii. pp. 319-20.) Some of the particulars are given in Dr. Turnbull's paper on "Deaths from Ether and Chloroform since the Hyderabad Commission," with reference to *L'Union Médicale*, August 5, 1890.

##### *Deaths under Ether and Narcotics.*

I. Male, aged sixty; removal of large tumor of lower jaw. One-third of a grain of morphine ten minutes before ether; some chloroform during the operation. No signs of consciousness two hours after the operation, and death one hour later with "all the symptoms of opium poisoning."

II. Female, aged fifty; removal of malignant disease of upper jaw. One-third grain of morphine injected twenty minutes before the operation. Anæsthetic not stated. "She died with the symptoms of narcotic poisoning about two hours after the operation was completed, having never regained consciousness."

III. Female, aged forty-seven; operation for strangulated femoral hernia, ether. Opium had been administered previously to facilitate taxis. After the operation she remained drowsy and the breathing was somewhat embarrassed. This increased, and two hours later she died, having never regained consciousness."  
—*British Medical Journal*, i. p. 69, 1881.

## DISCUSSION.

The PRESIDENT remarked, before the discussion was opened, that this was not a paper upon anæsthesia in general, and that there was not time for a discussion upon that broad subject. Moreover, it would be necessary to limit the time for each gentleman's remarks to five minutes.

DR. EDWARD W. SAWYER, of Chicago.—I appreciate the fact that the discussion of the general subject of anæsthesia is not in order. I desire to contribute a little evidence as to the efficacy of the solution which the author has mentioned in the second stage of labor. The effects of it are here quite analogous to what he has described in connection with operations. After an experience of about ten years with this combination of sulphate of morphia and sulphate of atropia—practically that of Ringer's—I am convinced that I have been able to save hours of suffering without in any way retarding the process of labor. I have called it my "staying solution." I usually give it by the stomach, administering fifteen to twenty drops of the same solution which the reader has described. It has been borne well, and has prepared my patients for any subsequent operation that might happen to be necessary.

DR. J. M. BALDY, of Philadelphia.—It is very difficult to distinguish between cause and effect in the use of drugs, and nowhere is this more true than in the administration of anæsthetics. I have used the method spoken of by the reader of the paper,

but I have used almost exclusively pure ether for my anæsthetic in all operations. Where I have had full control of the preparation of my patient, I have never observed any essential difference in the result, whether the one or the other method was employed. I must admit in making this statement that my experience with the hypodermic injection of morphine and atropine preparatory to the administration of ether has not been an extended one. But I have noticed that most of the patient's struggling while taking an anæsthetic is due to gastro-intestinal irritation and to a faulty method of administration. Where the gastro-intestinal tract has been thoroughly cleared preparatory to operation, the patient has remained just as passive under the anæsthetic, and has recovered from its influence with as little subsequent trouble, so far as vomiting was concerned, as in the few cases in which I have used morphine and atropine.

To give instructions in a general way to purge the patient before the operation, and to allow anybody to administer the anæsthetic, will result almost inevitably in vomiting and struggling at some stage of the operation. I have noticed that where all the preparations had been made just as I had directed, such symptoms did not arise. The patient should not only be purged, but she should be purged freely, the bowels being moved from six to twelve times before the operation, and no food or drink being allowed for a considerable time before the etherization is begun. Of course such preparation as that must be made with a great deal of judgment, and the condition of the patient upon whom the operation is about to be performed must be taken into consideration. But, as a matter of fact, I have found few who will not bear such preparation, and I seldom see vomiting after ether-narcosis. I seldom have patients struggle on the table or give other trouble due to the influence of the anæsthetic.

DR. W. T. HOWARD, of Baltimore.—I wish to return my personal thanks to Dr. Reeve for the very able, instructive, and scientific paper which he has read. I have never resorted to the procedure which he has described, but I shall certainly give it a fair trial in the near future. At the University of Maryland Hospital, where a great many operations are performed yearly, we have almost entirely given up the use of chloroform, save in very

slight or short operations. The reason is that on three different occasions patients have died during the administration of chloroform. One case occurred in my own practice. The patient was being prepared for an operation for vesico-vaginal fistula; not more than thirty minims of chloroform had been administered with Jagger's inhaler, when she suddenly died. She had inhaled chloroform a number of times before. One of the other cases occurred in the hands of the professor of surgery, that of a man who died almost in a moment; the third in the case of a man, in the practice of the professor of anatomy. The three deaths occurred in the same institution and led us to give up chloroform almost entirely. It is the uniform practice in that hospital to give, previous to the administration of the anæsthetic, a hypodermic injection composed of morphine, atropine, and carbolic acid (gr. v to ʒj), with a little glycerin in the solution. With it a smaller amount of ether or chloroform is necessary to anæsthetize the patient, and there is less struggling. I do not know that it has any tendency to prevent nausea and vomiting. I may add that we always purge our patients freely before the operation.

Dr. Thomas Keith, as you know, gave up chloroform years ago, because, in his experience, it caused more nausea and vomiting than ether. Anything which will enable us to obviate these and other distressing effects of general anæsthetics upon patients will be welcomed by the profession. I think that Dr. Reeve's remarks, which are always marked by truth and accuracy, commend themselves to us in describing a method which should receive a fair trial. I believe that my friend, Dr. T. A. Emmet, was the first to teach that, in grave diseases of the kidneys, ether is dangerous. This is accepted as a fact almost everywhere to-day. Still, in my case of death from chloroform the kidneys were diseased, as the post-mortem showed, so that even when it is administered there may be also sudden death in cases of kidney disease. Dr. Reeve seems to have had no death at all, which should highly commend his method.

DR. JOHN BYRNE, of Brooklyn.—I would like to add my testimony in a few words in connection with this subject. I have for years invariably used ether in anæsthesia, and invariably,

unless I occasionally forget it, have resorted to the hypodermic injection of morphine previous to administering the ether. Where I have omitted through forgetfulness to make the morphine injection, I have always had occasion to regret it, and I am firmly of the opinion that all the advantages which the author has so ably claimed for the injection of morphine before administering chloroform apply also to ether. It renders a less amount of ether necessary, not more than one-half as much being required; recovery from the anæsthetic is more agreeable, the struggle is less, and the subsequent nausea is undoubtedly diminished. In short, all the advantages are secured which, according to the reader, attend the hypodermic injection of morphine and atropine prior to giving chloroform.



ACCIDENTAL HEMORRHAGE DURING THE  
FIRST STAGE OF LABOR AT  
FULL TERM.

BY HENRY C. COE, M.D.,  
*New York.*

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So little has been added to our knowledge of this important subject since the appearance of Dr. Goodell's classical paper twenty-three years ago that, although many cases of this formidable obstetrical complication have since been reported in the interval, the force of his deductions remains unimpaired. It is a mournful commentary upon the limitations of our skill that, in spite of the progress of the obstetric art during the past twenty years, the mortality in cases of accidental hemorrhage is nearly as great as it was at the beginning of the century.

With his accustomed generosity, Dr. Goodell has placed at my disposal his own list of references to cases published since 1869, which I have supplemented by my own researches. To these are added numerous reports of unpublished cases occurring in the practice of English and American physicians, who courteously responded to my requests for information. It was my original intention to include in this paper *all* cases of accidental hemorrhage occurring in the gravid uterus, but it has seemed to me that it would be more profitable to direct your attention to a single phase of the subject, with the view of eliciting a closer discussion. To insure brevity reports of cases will be omitted.

To anyone who has made a careful study of the literature

of the subject it must be evident that the number of carefully reported cases is remarkably small. This is readily explained by the fact that the catastrophe is so sudden and overwhelming that the accoucheur is rarely in a position to note the initial phenomena calmly and judicially. Frequently summoned when the patient is practically moribund, his whole attention is necessarily centred upon the tragedy itself; he has neither the time nor the composure to investigate in a scientific manner the causes which led to it. There is a disposition to class under the same category cases of partial separation of the placenta with slight hemorrhage, not recognized until after delivery, with those of graver character which so often terminate fatally. This has led to much confusion and vitiates the statistics. In no other way can we explain the fact that many accomplished obstetricians have reported a heavy mortality, while others of lesser note have conducted several cases without a death, and that, too, by trusting largely to the "efforts of Nature." I do not exaggerate in stating that five-sixths of the cases of accidental hemorrhage have occurred during the latter months of pregnancy, and that the majority of these have been of traumatic origin (either direct or indirect violence). In other words, this is not only an extremely rare complication when occurring during labor at full term, but has proved to be peculiarly fatal under these circumstances, many women having died undelivered. It is important to emphasize the wide difference between the two classes of cases. In the former the physician is called to a pregnant woman who, while perfectly well, receives, we may assume, a blow in the abdomen. She is seized with a severe, localized pain; possibly labor-pains occur; she develops all the symptoms of internal hemorrhage, (with or without external bleeding); the uterus becomes distended, and the diagnosis is almost positive. Delivery by version is favored by the immaturity of the fœtus, and the problem presented is a comparatively simple one.

On the other hand, what is more insidious than the onset

of the symptoms during the first stage of labor, when the accoucheur least expects such a formidable accident, and is thrown off his guard until the patient's condition has become so alarming that the full sense of the appalling calamity forces itself upon him! When the diagnosis is no longer doubtful, he is confronted with a situation which may well shake the steadiest nerves. With the patient in collapse, her uterus hyper-distended and atonic, a rigid, non-dilated os, and a fully developed child, he finds himself in a perplexing situation. He desires, if possible, to save the child and to rapidly empty the uterus with the least possible addition to the existing shock of the mother. There is also presented the inevitable prospect of post-partum hemorrhage. Undue haste may be fatal, delay equally so. Happy the man who, in the face of such an emergency, has, even by his painful experience in former cases, so clearly grasped the important questions at issue that he is not paralyzed by the disaster, but is prepared to act promptly and judiciously. Certainly no teacher of obstetrics can afford to hold doubtful or contradictory views on this subject. It is time that the confusion which exists in the minds of the profession regarding the treatment of accidental hemorrhage should be dispelled. It is with this view that I venture to re-introduce such an old theme to this learned body.

The following brief notes of a case, which I have already reported in full in the *American Journal of Obstetrics*, February, 1891, will serve as my text. The record possesses more than ordinary interest, because the patient was under observation from the beginning of labor until the fatal termination:

The patient was a healthy primipara, of wealthy family. At full term she began at 9 P.M. to have slight and irregular labor-pains, with but little effect upon the os. Vertex presentation, O.L.A., child large. Pelvis normal. External palpation showed no abnormality. Fœtal heart strong. Labor progressed slowly until midnight, the patient being up and about. At 3 A.M. the

head was engaged, the os half dilated and the foetal heart could be heard. The pains were short and irregular, and the patient complained of a constant pain in the lower part of the abdomen. She was quieted with opium and dozed. At 6 A.M. I was called by the nurse, who said that the patient had had a slight "show." She had been walking about, and did not feel weak. Palpation of the abdomen (which was naturally large) showed that the uterine tumor had increased in size, and had a peculiar doughy feel, while the foetal parts, formerly distinct, were obscured, and the heart could not be heard. The abdomen was quite tender. I at once summoned counsel (Dr. Grandin and the late Dr. Barker), although I did not at first recognize the nature of the complication, as the patient showed no signs of internal hemorrhage. While I was in an adjoining room she rose to use the commode, and had quite a profuse discharge of blood from the vagina. Her pulse then became accelerated, but was not very weak. Stimulants were administered. I ruptured the membranes; strong bearing-down pains came on, and, as soon as Dr. Grandin arrived, we delivered a dead child promptly with the forceps. It was followed by the placenta and a quart of fluid and coagulated blood. The uterus was atonic, and for a long time resisted all our attempts to promote contraction. The actual amount of blood lost was not excessive, but the patient died (apparently of shock) an hour after delivery.

The placenta was the seat of general fatty and calcareous degeneration. The funis was of normal length and was not twisted about the neck of the child. I mention this latter fact because my friend, Dr. King, suggested this as a possible explanation of an accident for which I have been unable to discover any satisfactory cause. Reference will be made to the salient points of the case in the course of the paper. Its interest turns upon the obscurity of the initial symptoms, the earlier recognition of which might have averted the fatal issue.

**ETIOLOGY.**—It will appear from the foregoing that the etiology of accidental hemorrhage occurring during labor is far less clearly defined than in the later months of pregnancy. Traumatism is the most frequent factor in the latter class of

cases, either direct violence (as a blow or fall) or indirect (as coughing, straining, undue exertion, etc.). A certain number of cases have been ascribed to the influence of violent emotions. In ten of those collected by Goodell the accident was said to have occurred during sleep, but it is probable that coitus was a cause in some of these. The difficulty of explaining non-traumatic detachment of the placenta is shown by the number of etiological factors that have been invoked. Multiparæ are eight times as liable to the accident as are primiparæ. Good observers have mentioned among the predisposing causes the hemorrhagic diathesis, general febrile affections (typhoid, variola, and scarlatina); Winter and Löblein have attributed it to nephritis, J. Veit to "increased arterial tension," and Benicke to *morbus Basedowi*. Death of the fœtus, twin pregnancies, and hydramnios are direct causes according to Winkel, and fatty degeneration of the placenta is a well-recognized factor. "Irregular uterine contractions" were noted in 20 per cent. of the cases. Short funis has undoubtedly led directly to premature separation of the placenta in several reported cases, but it is difficult to assign this as a cause of the accident early in the first stage of labor, before descent has begun or direct traction has been made upon the cord. According to Peu, only one in one thousand cases of dystocia is due to short funis. It is to be regretted that in the imperfect reports of most of the cases of accidental hemorrhage occurring during labor this interesting point have been overlooked. It seems to me that it is a mistake to seek for a single etiological factor in a non-traumatic case. One is not enough, else why is accidental hæmorrhage so infrequent, while the causes are sufficiently common? There must be a favorable combination of several factors. In my own case there were certainly two—irregular and imperfect uterine contractions with extensive fatty degeneration of the placenta. Unfortunately it is impossible in a given case to predict what combination may lead to accidental

hemorrhage. One need not reproach himself for lack of prescience.

**SYMPTOMS.**—It is important to bear in mind the fact that there are two sets of symptoms, what may be termed initial and final, or probable and positive. Most writers unite in affirming that the latter are alone reliable, and that when they have clearly developed the time for successful interference has already passed. I am unwilling to subscribe to this confession of ignorance and helplessness. It cannot be that all our modern study and investigation have not altered this pessimistic view. Is it not possible to recognize the presence of accidental hemorrhage at its inception and by prompt interference to arrest the fatal result? I believe that it is, and that a careful analysis of such cases as have been accurately observed will show that there is a striking uniformity in the symptoms of the cases which we are considering. Irregularity and feebleness of the labor-pains have been generally noted. In some instances the pains were strong for several hours and then became feeble and irregular without apparent cause, sometimes ceasing entirely. By placing the hand over the uterine tumor it will be found that the fundus alone contracts, the cervix not being affected. The membranes do not protrude during the pain and dilatation is unusually retarded. The patient complains of a continuous pain in the lower part of the abdomen (sometimes on one side), which takes the place of the usual intermittent labor-pains or may coëxist with them. At this stage the localized pain is not attended with that feeling of distention or bursting of which the patient complains later. External palpation may reveal nothing abnormal as yet, except that the uterus is abnormally tender, as in my case. In some cases a boss, or projection, was early noted on the uterus at the placental site; it was supposed to be due to the accumulation of blood between the detached central portion of the placenta and the uterine wall. Auscultation of the foetal heart will show that it is feeble and irregular. Depaul (*Gazette des*

*Hôpitalaux*, August 26, 1879) lays stress upon this point as diagnostic of separation of the placenta, especially if a slight "slow" of blood has been noted.

It would certainly indicate that the fœtus was subject to some serious disturbing influence aside from the ordinary effects of prolonged labor, since we assumē that the head has not engaged and that the uterine contractions are feeble. The patient at this time may be simply restless and irritable, but is able to sit up and walk about; her pulse is not affected and to the ordinary observer the case would appear to be one of uterine inertia. But let the severe continuous pain, the atony of the uterus, the abdominal tenderness, and the irregularity of the fœtal heart put him on his guard, for they are the initial symptoms of the approaching catastrophe, indicating that blood is escaping between the uterine wall and the placenta. The histories of these non-traumatic cases show that the separation takes place gradually. If at this time external hemorrhage occurs, the diagnosis should be more than probable.

The feeble labor-pains now cease entirely and are replaced by the continuous pain, which seems to be of a bursting character. The uterine tumor becomes notably larger, often irregular in shape, and on palpation gives a doughy sensation instead of the usual elastic feel. The fœtal parts can no longer be distinguished and the heart cannot be heard. External bleeding may, or may not, occur. It is rare that accidental hemorrhage is wholly concealed.

It may seem surprising that only a passing reference has been made to external hemorrhage. It is because it is by no means constant, having been noted in only one-fourth of the reported cases. The strict limitation of the term "concealed" to cases in which there is no visible bleeding whatever is therefore unnecessary, since the hemorrhage is nearly always concealed until it reaches serious proportions. As Goodell aptly remarks: "This trustworthy symptom does not usually occur at the outset of the attack, but at a time when it may

be too late to interfere. A diagnosis should not, therefore, depend upon its presence, but simply be affirmed by it."

The patient's pulse and general appearance indicate that something serious is taking place. Meantime labor is entirely arrested, the os remains partially dilated, and the membranes (if they have been preserved) are tense. The patient rapidly grows worse, syncope occurs, she passes into a state of collapse, and may die undelivered. Or, the membranes having been ruptured, bearing-down pains occur, and under favorable circumstances she is delivered spontaneously, to succumb to post-partum hemorrhage, if not to the shock of the intra-uterine bleeding. This is the rule in cases which are left to themselves, although a few women have survived under these circumstances.

It is to be noted that in a considerable proportion the final symptoms develop so rapidly that they are to be regarded as due to shock, quite as much as to loss of blood. The same, or a greater amount of blood, escaping into the peritoneal cavity in consequence of the rupture of an ectopic gestation, rarely causes more sudden and profound shock than is observed in fatal cases of accidental hemorrhage. Death seems to be due in not a few instances to sudden hyper-distention of the uterus, rather than to hemorrhage. This is a fact of no little import in connection with the question of treatment. The writer just quoted appears to be somewhat contradictory when he adds: "The cardinal rule is to measure the loss of blood by the severity of the collapse."

**DIFFERENTIAL DIAGNOSIS.**—Sudden accidental hemorrhage has been mistaken for a severe attack of colic, but this error could hardly be made during labor when the attention of the accoucheur was centred upon the uterus. It is well to remember, however, that colic might occur at this time, as the patient might have had intestinal trouble previous to the beginning of labor. It is only a fortnight since I saw, with Dr. Mundé, a rapidly fatal case of ruptured ovarian abscess, the symptoms of rupture being marked by colicky pains such



as the patient had had on several occasions during the preceding week, apparently due to intestinal adhesions.

Stress has been laid upon the difficulty experienced in distinguishing accidental hemorrhage during labor from spontaneous rupture of the uterus. But when we remember that the latter accident occurs during the progress of active pains, and is followed by a diminution, rather than by an increase, in the size of the uterus, by a recession of the presenting part, and by the sudden (instead of the gradual) onset of symptoms of internal hemorrhage, we ought to avoid error. That the differential diagnosis is extremely important is evident in view of the question of immediate laparotomy, which I have advocated in a former paper on rupture of the uterus. I have emphasized the fact that accidental hemorrhage during labor is always attended with symptoms indicating an initial stage.

Because of its bearing on an interesting point in diagnosis, I cite briefly a case which I saw in consultation a few days ago. A primipara had been in labor eighteen hours, the membranes having ruptured six hours before. The pains had been feeble and irregular, and had almost entirely ceased. I found her with a feeble pulse of 130, and a temperature of  $104^{\circ}$ ; she was evidently in a serious condition. The uterus was greatly distended, the foetal parts could not be felt, and the foetal heart was inaudible. The os was half dilated, the head not engaged. Mindful of my former experience, I at once suspected accidental hemorrhage and advised prompt interference. I hesitated to attempt version for fear of rupturing the uterus, and determined to apply the forceps, as the cervix was dilatable and the head small. On pushing up the head there was a gush of liquor amnii but no blood, and the uterus diminished in size, while the diagnosis was thus cleared up. Delivery of a dead child was easily effected. The placenta was adherent at its edges, and on peeling it off there was profuse post-partum bleeding, which was eventually controlled and the patient made a good recovery. It seemed probable that there had actually been a circumscribed con-

ceased hemorrhage from premature detachment of the central portion of the placenta, although the primary trouble was atony of the uterus, due to hydramnios. The points of difference between this and a genuine case of accidental hemorrhage were the fact that the serious symptoms did not develop at once, the usual bursting pain was absent, and the patient's general appearance did not suggest internal bleeding. I regard the little manœuvre of pushing up the head in the intervals between pains as an exceedingly important one, since if the uterus had been filled with blood it would have allowed it to escape externally, thus giving a positive clue to the true condition of affairs. This same point was made by Bell in 1855.<sup>1</sup>

PROGNOSIS.—The prognosis is so bad that when one reads that an English *confrère* saved all his cases (four) by adopting a strictly Fabian policy, one is forced to infer that they were not of the variety now under consideration. As the condition has seldom been recognized before it assumed the most serious aspect, it may be assumed that in order that the mother and child, or even the mother alone, may be saved, there must be a combination of favorable circumstances—not only the exhibition of extraordinary skill and promptitude on the part of the accoucheur, but unusual resistance to shock on the part of the patient, in addition to efficient contraction of the uterus after delivery. As regards the child, it should be assumed that it will perish, its chance of survival being so small that when it occurs it is to be considered as little short of a miracle. To direct our treatment with reference to its possible salvation would only hamper us in our efforts to effect that rapid delivery which can alone save the mother. The prognosis in a particular case will vary according to the time at which the accident is recognized, the amount of shock, the character and efficiency of the labor-pains, and the condition of the cervix and presenting part. Some patients die undelivered

<sup>1</sup> Glasgow Med. Journal, 1855, vol. ii. p. 6.

purely of shock, others succumb from the actual loss of blood. In the latter the progress is more gradual and the prognosis correspondingly better. If the pains are fairly strong (the uterus not being hyper-distended), the cervix is dilatable, and the head is engaged, we ought to save the patient. If she is in collapse, the uterus distended and absolutely inactive, and the cervix rigid, so that time must be lost in dilating it, the outlook is not encouraging.

Rupture of the uterus is to be apprehended in *multiparæ*, either spontaneous or occurring during attempts at delivery. I can conceive that this accident might be favored by adopting the advice of some writers to make firm pressure over the fundus after giving ergot. This lamentable result actually followed the application of undue pressure to the fundus by an unskilled assistant, while I was performing a difficult version in a case of *hydrannios*, though only three fingers were introduced into the uterine cavity, on account of rigidity of the os.

When delivery has been effected there remains the inevitable danger of post-partum hemorrhage, which may destroy the already exhausted patient before it can be controlled. When a woman is in collapse from hemorrhage the loss of a few additional ounces of blood may turn the scale against her.

In brief, the prognosis in accidental hemorrhage during the first stage of labor at term is exceedingly grave, and it should be so stated to the friends of the patient as soon as the nature of the case is recognized. The attendant should certainly divide the responsibility and seek counsel at once.

TREATMENT.—I approach this part of the subject with considerable hesitation, since I do not feel that it would be seemly to dogmatize, in view of my limited experience. Still, every man ought to hold and express decided opinions, in order that he may be the more readily corrected if he is wrong.

There exists a singular want of unanimity among weighty authorities with regard to the management of these cases, which is calculated to confuse and hamper the mind of the

accoucheur at a time when hesitation is fatal; faulty instruction has doubtless cost the lives of many patients. The responsibility thrown upon teachers of obstetrics is obvious. There is urgent need of a few clear, concise rules for the guidance of the profession. If this brief paper can elicit a useful discussion of this question its purpose will have been more than fulfilled. The gist of the matter lies in the proper answer to this question: "Shall we proceed to empty the uterus as rapidly as possible, or shall we wait?" I have already alluded to Brunton's practice of preserving the membranes and waiting for dilatation to take place, which, he claims, has been invariably successful in his hands. Robert Lee (*Clinical Midwifery*, page 368) believed that it was sufficient (if done "early enough") to rupture the membranes, to give ergot and stimulants, and to apply a firm binder. "The uterus," he adds, "will in all probability contract upon its contents and expel them without further trouble." Of the six patients thus treated, the two who really had profuse hemorrhage died.

A prominent American teacher of obstetrics used to tell his students that evacuation of the uterus was to be regarded as a *dernier ressort*. I find in the notes on his lectures these words: "Emptying of the uterus it will rarely be found necessary to resort to, . . . for few cases will resist evacuation of the liquor amnii." So much for theory. Now, what are the actual facts? Seventy-five per cent. of the cases in which this hopeful view was taken of the action of the natural forces resulted fatally, while in those in which delivery was promptly effected the mortality was only thirty per cent. What is accomplished by simply rupturing the membranes when the os is rigid, non-dilatable, and the presenting part not engaged? It is true that we may cause the uterus to contract, but it acts inefficiently because at a great disadvantage. A certain amount of *vis à tergo* has been supplied, but not enough to overcome the obstacle in front. It is an open question if the progress of the hemorrhage is not favored in the intervals between the

pains. The administration of ergot under these circumstances, if immediate delivery is not accomplished, is based upon erroneous principles. The distended atonic uterus is in a state of temporary paralysis, precisely like that which sometimes affects the intestine after abdominal section. Note that I am referring to cases in which the os is undilated, and the head not yet engaged. Of course, under the reverse conditions, puncture of the membranes is clearly indicated. It seems to me to be worse than useless, nay, foolhardy, to wait for the uncertain action of ergot when the patient's life may be swiftly ebbing away. Hear the confession of a conscientious obstetrician, who tried this method with mournful results: "I would not in future place much reliance upon the use of ergot in such cases, but *at the earliest possible moment* would dilate and then turn, or deliver with the forceps."<sup>1</sup>

Granting that this dilatory plan of treatment is opposed to the spirit of modern surgery—which is that when there is active internal hemorrhage, it must be directly reached and controlled, even if the abdominal cavity is opened in order to find its site—we are next led to inquire what is the best method to be pursued. Here, again, we are confused by the varying statements of authorities. Some insist that version shall be performed in every case, even after the membranes have been ruptured and ergot administered; others claim that delivery can be effected most rapidly by high forceps, though the head is not engaged and the os is only partially dilated. Unfortunately, many of the reports of cases are so imperfect that we cannot judge accurately regarding the respective risks of the two operations. It is difficult to see why the indications for them are any different than under ordinary circumstances, and why one should be adopted to the exclusion of the other, just as it seems strange that we are advised to rupture the membranes and then to perform version. The course which would be adopted in the case of a hospital

<sup>1</sup> Van Gieson: Trans. N. Y. Path. Society, December 3, 1870.

patient would be necessarily somewhat different in private practice. The plan which I have determined to pursue, should I be so unfortunate as to encounter this emergency again, is briefly as follows: As soon as the complication is suspected, vigorously stimulate the patient by mouth, by rectum, and hypodermatically, meantime sending for a skilled obstetrician, with the request that he bring his craniotomy instruments. The family are to be warned that the patient's condition is serious, and that the most heroic measures are justifiable in order to save the mother, since there is no hope for the child.

Under complete anæsthesia (preferably ether) the os is to be dilated manually, Barnes's bags only being employed in exceptional cases where it has not begun to dilate at all and the patient's condition is such that her life is not jeopardized by the delay. Care is exercised *not* to rupture the membranes. Then perform version, with more than usual care, instructing the assistant to avoid rough manipulation. At this stage give ergot freely hypodermatically. There should be a short delay before extraction, in order to give the uterus time to recover its tone, if it will. If the head is arrested by the partially dilated os, do not waste time and add to the existing shock by trying to drag it through, but perforate at once. If, on the other hand, the head has already been engaged, as in my case, and the os can readily be dilated, rupture the membranes and perform craniotomy at once, unless the head is of small size, instead of spending fifteen or twenty minutes in delivery by forceps.

This is always possible in hospital practice, and should be in private, also. Now comes the critical question: "How shall we meet the danger of post-partum hemorrhage?" I am convinced that in the past many lives have been sacrificed by the adoption of the routine methods laid down in the text-books. While we are trying in the orthodox way the usual agents—ice, hot water, astringents, ergot, faradism—the patient may continue to bleed and we may lose her, even though the delivery has been effected with exceptional

promptness and skill. What more natural than to apply the ordinary principle which we follow in cases of profuse oozing within the pelvis—tampon with iodoform gauze? Having recently employed this method successfully in a desperate case of post-partum hemorrhage with complete atony of the uterus, I shall in future regard it as the *first*, not as the last, means to be invariably employed.

Having delivered the child, then instantly introduce the hand into the uterus, turn out the placenta and clots and stuff the cavity full of gauze, holding it in place with one hand while the other makes counter-pressure over the fundus. It makes no difference whether the uterus contracts at once or not; the hemorrhage is effectually controlled, and we can now turn our attention to stimulating the patient, transfusion, etc. There is nothing new about this method of procedure, but it seems to me that it is the simplest, the most effective, and the most direct way of reaching the end in view, which is, after all, the main thing to be aimed at in the management of all obstetrical emergencies.

The practice of obstetrics is attended with such peculiar anxieties and uncertainties that no thoughtful man can view without a shudder the reckless and self-confident manner in which too many assume its responsibilities. Trusting to luck, or to what they vaguely term the "powers of Nature," they forget that this branch of medicine is beset with formidable complications which test the knowledge and skill of the most experienced, complications all the more to be dreaded because they are sudden and unforeseen. Long familiarity with the ordinary phenomena of the first stage of labor renders even us, I would not say careless, but inattentive to minor deviations from the normal. We need a lesson occasionally, and we get it, sometimes a severe one. He who in a long series of cases has never encountered a fatal emergency is a subject for sympathy, quite as much as for congratulation. His time will surely come, and when he least expects it. Just as the laparotomist is unable to foretell that his next case of abdomi-

nal section may not present complications such as he never before encountered and such as are not mentioned in the books, so the accoucheur when called to a case of labor knows not if he may be called upon to face an emergency so rare that he has hitherto regarded it merely as a scientific curiosity. We cannot afford to hold doubtful views regarding these questions.

The best-read man may be the most helpless in the presence of the actual condition about which he can discourse so fluently. The question to be decided is not, What do the books advise? but What am *I* to do *now*? Let us settle disputed points away from the bedside and have before our minds a clear idea of what course we shall pursue in every possible emergency, whether we have encountered it before or have only a theoretical knowledge of it. In the practice of medicine, as in religion, each one must formulate his own creed; books and wise teachers may do much, but the crystallized belief is the product of the individual soul.

#### DISCUSSION.

DR. CHARLES JEWETT, of Brooklyn.—The prominent factors in the etiology of accidental hemorrhage are friability of the vessels and conditions which favor premature separation of the placenta. One of these conditions is undue contraction of the uterus from whatever cause. A curious example of the latter kind, in which hemorrhage occurred in considerable though not fatal degree, recently came under my observation. The patient had been taking twenty-grain doses of quinine twice daily for two or three days for an intractable malarial attack, and this was apparently the cause of the violent contractions and the hemorrhage.

As to diagnosis, the fatal mischief has usually been done before the symptoms are sufficiently developed to make a positive diagnosis possible. Still there are certain early signs in a good many cases which should at least keep the obstetrician on the alert. Persistent pain in the abdomen during the first stage of labor



should, I think, attract attention at once to the possibility of a concealed intra-uterine hemorrhage, and certainly should lead to a very careful abdominal palpation. More attention to the abdominal examination during the first stage of labor, as a matter of routine practice, might lead to earlier diagnosis in many cases. Again, some information might be gained by repeated auscultation of the foetal heart, which ought to be the rule in all labors. With reference to the treatment, I was glad to hear the reader advocate a departure from the usual teaching in this matter. Rupture of the membranes, I assume, has been practised in expectation that the vessels would be partially ligated by retraction of the uterus, but the control of hemorrhage during the first stage, may be equally possible by use of an abdominal bandage while the membranes are yet unruptured.

With regard to the further management of the case, delivery, I think, should be accelerated as much as possible after the first stage is completed, or nearly so; but precipitate interference, though sometimes unavoidable, is always dangerous. I have witnessed several deaths in different forms of puerperal hemorrhage which I believed attributable to precipitate delivery at a time when the patient was in profound shock.

Another point which I wish to emphasize is the value of the intra-uterine tampon of iodoform gauze, or of simple sterilized gauze, for the control of post-partum hemorrhage. I recently had an experience in which I stopped the hemorrhage with no difficulty by this means, though I felt very certain that I would not have done so by ordinary methods. A can of iodoform or aseptic gauze should form a part of every obstetric outfit.

DR. R. A. MURRAY, of New York.—The paper which the reader has presented is one of the best resumés of the subject within my knowledge, and the case related is a most instructive one. He spoke of the case once before the New York Obstetrical Society, and there was a divergence of opinion expressed with regard to the treatment. As the author has so well described the symptoms, I shall not say anything upon that point. The important question is, how to treat these cases. It should be borne constantly in mind that the treatment before the os has dilated cannot be the same as that which one should practise afterward. In

two cases which have come under my observation the presence of hemorrhage was evident from the rapid enlargement of the abdomen and from the severe pain which the patients suffered. In one I tamponed the uterus, while in the other I used hot water, etc., after extraction of the child. In the first, the os not being dilated, the nurse was directed to hold the arteries of the upper extremities, the mother those of the lower extremities, the feet were elevated, and thus what blood remained went to nourish the brain. Stimulants were also given hypodermatically. In this case the pains, which had entirely ceased, very shortly recurred. The os had been slightly dilated, and could not have been dilated at once without, probably, sufficient force to kill the patient by shock. But when the pains came on, the os became pretty well dilated; I then dilated further, manually, and ruptured the membranes. Immediately after the delivery of the child, there followed an ordinary kitchen basinful of clots. Yet the patient was able to bear this, because the brain was kept alive by driving the blood to it at the expense of the extremities.

I think that there is too great a temptation to hastily rupture the waters, introduce the hand, and turn and deliver rapidly. Such a course will surely increase the shock, and place the uterus in a condition in which it cannot contract afterward.

In the other case, in which also the shock was extreme, I used the same measures for keeping the brain alive—cutting off the circulation from the extremities and giving stimulants—and after rupture of the waters delivered with the forceps, the patient having by this time revived somewhat. Here, too, a great mass of blood-clots was turned out. In both cases the cause was the same, namely, a fatty and calcareous placenta; in one there was a suspicion of syphilis, but in the other none. Both patients had very little after-hemorrhage. In one the womb was tamponed; in the other I had time during the progress of the case to get hot water ready, which I injected into the uterus after delivery. Both patients lived. The cases show how severe shock may exist and yet life be saved.

In neither of these two cases was external hemorrhage marked. There was not more than a cupful of blood apparent when the shock was most profound.

I believe in tamponing the uterus, but if the membranes have not ruptured, or if the cervix has not dilated, tampon the vagina thoroughly with iodoform gauze and you will have an irritant which will cause the cervix to dilate and at the same time prevent hemorrhage, if there is any, and yet give us a barrier to press against if we have to make compression of the uterus. But I think the ordinary effect of rupture of the membranes, which is recommended so highly by Barnes in the treatment of placenta prævia, is not to be sought after in these cases. You do not want the paralysis of the uterus which ensues immediately after escape of the waters, and which gives the cervix, the source of hemorrhage in placenta prævia, quietude, thus arresting the bleeding. In the cases under discussion the hemorrhage is from the body of the organ, not from the cervix.

DR. HENRY D. FRY, of Washington.—Dr. Coe stated in his paper that the mortality from accidental hemorrhage is nearly as great now as it was at the beginning of the century. That fact, I think, should lead us to look for some other method of treatment than that formerly practised. Rupturing the membranes, *accouchement forcé*, and waiting had been tried, and probably the only new step advocated in the paper to-day is the use of the cranioclast or other instrument to reduce the size of the child's head. I think Dr. Murray made a good distinction when he said the treatment should be guided according to whether the os is dilated or not. Undoubtedly, where the cervix is dilated and you can effect delivery at once, it should be done. But the question arises, what shall one do where the os is not dilated? If we should perform *accouchement forcé* we would increase the shock, probably add post-partum hemorrhage, and the result would be fatal. I do not believe the suggestion of Dr. Murray, to tampon the vagina and make pressure from above, is worthy of much confidence. Cases of this form of hemorrhage have ended fatally when there had not been a drop of blood externally, and the membranes had not ruptured. The post-mortem showed the placenta pretty well separated, the blood, fœtus, and amniotic fluid filling the uterus; so that preventing the outflow of blood will not prevent a fatal result.

Dr. Coe omitted in reading a portion of his paper which I was

very anxious to hear. I wished to know whether he recommended any surgical treatment. Lawson Tait suggested that in cases of ante-partum hemorrhage, whether accidental or unavoidable, we perform Porro's operation. The question arises whether, if this were done, the mortality would be as high as under other methods of treatment in cases in which the cervix has not dilated. The mortality for the mother now is over fifty per cent., for the child ninety-four per cent. I do not think it could be worse if Porro's operation were performed. I would hesitate to even suggest this if it were not that recently a case has been reported by Smiley before the British Medical Association in which this method was adopted with success. His interne was called to see a woman living in a tenement-house near the hospital. She was in the later months of pregnancy, and had been suffering from violent hemorrhage, at first concealed, later some blood escaped. The membranes had been ruptured before he arrived, with a view to check the hemorrhage. The os was so small that he could introduce only one finger. The uterine tumor was much larger than it should have been at that period of pregnancy. The doctor realized the fact that if he should attempt to deliver the woman forcibly she would not, in her state of collapse, survive, and he very promptly performed Porro's operation. He found the placenta entirely separated, the uterus full of clots. The patient made an uninterrupted recovery.

By this method the uterus is constricted and the hemorrhage checked in a few minutes, and there is no danger of secondary or post-partum hemorrhage. The question arises whether it is not safer than to attempt to deliver by the natural passage.

DR. T. A. REAMY, of Cincinnati.—I have had charge of three thousand women before and during labor, and I have never seen but one case of accidental concealed hemorrhage—ante-partum hemorrhage—sufficiently severe in character to require treatment, or worthy of report. But that case presented features so unusual in some respects that I beg the privilege of very briefly reporting it. I may say also that it is pertinent to this discussion. About seven months ago I was asked to see a case by Drs. J. B. and John Jones, brothers. They said that the woman was in collapse, urging me to go. I found her at her home, in a suburb of

Cincinnati, in a state of collapse. She was pulseless at the wrist, and evidently was dying. Judging by the proximity of the child's extremities to my hand when I placed it on the abdomen, I thought that there must be rupture of the uterus. The abdomen was large, but was flat anteriorly and apparently distended laterally. Hastily making a digital examination, I found that the head was on the perineum. I may state here that the woman was at the seventh month of gestation. Having my forceps with me, and still thinking the uterus was ruptured but that the head being at the outlet was perfectly accessible, I slipped the forceps on and extracted the child without the least effort. Having suggested to Dr. Jones to give a hypodermatic injection of ergot, I at once introduced one hand and found the afterbirth partly within the os and partly in the vagina; I removed it, and then turned out two clots, one of which, I think it is no exaggeration to say, was quite as large as the fetal head, the other of half the size. Introducing my hand further, although the woman was about dead already, I was pleased to learn that there was no rupture. Before I finished my examination the woman was dead. She certainly died within ten minutes after I passed the threshold of the door. I continued my examination, made it critical, and showed that the uterus was not ruptured. Had the walls, however, been composed of only an ordinary piece of drilling, they could not have felt thinner.

The doctor informed me that this woman had had a great deal of pain during gestation, especially during the last three months. She had had labor-pains two-thirds of the day. He said she had not taken ergot, and he was hardly able to tell why delivery did not advance. I have never seen another such case—the universal relaxation of the uterus, and the enormous quantity of blood which had coagulated within it. I am perfectly sure that not two tablespoonfuls of blood were lost externally. Of course she did not bleed any after delivery, for there was no heart to pump the blood.

DR. EDWARD REYNOLDS, of Boston.—There are two points about which I wish to speak. In Goodell's paper a considerable proportion of the cases are said to have been early marked by the development of a tumor formed by the confinement of the

effused blood behind the edges of the placenta. In a successful case which came under my observation, when the first symptoms of collapse appeared, accompanied by a feeble and intermittent fetal heart, etc., careful palpation demonstrated the existence of such a tumor, obscuring the outlines of the child at that locality. It presented a peculiarly doughy feeling, and was the point which established the diagnosis of concealed hemorrhage and induced me to interfere at once. That sign cannot always be depended upon, but when it does occur it is of much importance.

As to treatment, I think the hemorrhage is to be checked by one means and by one means only—that is, by securing contraction and retraction of the uterus; but in what I have to say now, I wish to be understood as excluding cases in which the patient is so far collapsed that no active interference can be attempted. In cases in which the condition is detected early, our object is to avoid further loss of blood and post-partum inertia, and is, I think, most likely to be accomplished by securing a complete evacuation of the uterus, and thus preventing the extreme distention which paralyzes the uterine muscles, leads to atony, and thus makes the case hopeless. I am inclined to think that in cases where collapse is not extreme prompt etherization, rapid manual dilatation of the os, evacuation of the liquor, and the extraction of the child and the secundines will do more to prevent atony, shock, and excessive loss of blood than any other procedure which is possible. The child will often be lost, but I think the method gives us the best chance for saving the mother. With regard to increasing the shock by a rapid extraction of the child, it seems to me that this procedure should diminish the shock of the great distention of the uterus to an extent which would more than compensate for the intrinsic shock of the operation. I do not advocate a brutal *accouchement forcé*, but I would not hesitate through fear of increased shock to turn and do a moderately rapid extraction.

Finally, as to the treatment of post-partum hemorrhage in these desperate cases, I have had no experience with tamponing the uterus. In a case of post-partum hemorrhage in which the patient was almost moribund I would introduce a strong styptic into the uterus, preferably dilute Monsel's solution. I have seen

three cases in which that was done, one being my own. My own patient was practically moribund, but she lost no more blood after the use of the styptic. In the two patients who lived no ill symptoms followed. I think that the fear which is entertained regarding the introduction of a styptic into the uterus post-partum is largely the result of experience obtained during pre-aseptic days. I would not wish to be understood as favoring the use of styptics except in extreme cases, but in such cases I would introduce Monsel's solution into the cavity of the uterus without hesitation.

DR. A. J. C. SKENE, of Brooklyn.—Porro's operation, which has been suggested in these cases of ante-partum hemorrhage, is a very dangerous one, and I think should not be undertaken by those of limited experience. The statistics of the operation under far more favorable circumstances are not very encouraging, and I can only conceive of it hastening, as a rule, the death of the patient in these cases. But, if you insist upon giving modern surgery a chance, I would suggest an operation which can claim to be modern and which would remove all possibility of concealed ante-partum hemorrhage; it would be to remove both ovaries early in life!

DR. EDWARD W. SAWYER, of Chicago.—I would like to refer to a case of hemorrhage occurring about an hour and a half after normal labor, contraction having meanwhile taken place. I had remained with the patient, as is my custom, an hour; when leaving her the uterus was well contracted. I was soon hastily called, found the woman nearly dead, and the abdomen nearly as large as it had been before the child was born. I had no difficulty in introducing my hand into the uterine cavity and removing a clot larger than the fetal head, although up to this time there had been no external evidence of hemorrhage. I allowed my hand to remain within the uterus, which speedily contracted, expelling my hand. There was afterward no relaxation of the uterus. Ergot had been given and was repeated.

DR. T. ADDIS EMMET, of New York, remarked that since he had done no obstetrical work for a good many years, he supposed he had no right to speak on this subject, but he would suggest, since Porro's operation had been mentioned, that in a

desperate case the uterus might be inverted and an elastic ligature be applied to the cervix.

DR. COE said, in closing: I wish it to be distinctly understood that in urging the propriety of emptying the uterus as speedily as possible, I do not mean that one should resort to a rough *accouchement forcé*, without regard to the condition of the patient. She should be stimulated vigorously from the first, and throughout the progress of the operation. Manual dilatation of the cervix, effected in a skilful and judicious manner, requires at least ten or fifteen minutes, which time can be utilized for pushing stimulants hypodermatically. The experience of all who have had to do with serious cases of accidental hemorrhage shows that it is rare that a waiting policy is successful. While waiting for the patient to get stronger, she dies undelivered. The same argument applied to a case of progressive intra-peritoneal hemorrhage would find few supporters. I do *not* recommend a blind, reckless delivery, but a rapid, intelligent termination of labor with the least possible addition to the existing shock. When the latter is so profound that immediate interference is clearly unjustifiable, we must wait a little while; here the individual judgment comes in. I am unable to see how tamponade of the vagina, as suggested by Dr. Murray, would control hemorrhage within the uterus; the presenting part is already an effective tampon, so far as that is concerned. Valuable time would certainly be lost while waiting for the dilating effects of a vaginal tampon. Barnes's bags would certainly be preferable. Dr. Fry has alluded to Porro's operation as a *dernier ressort* in a desperate case. I purposely omitted any reference to it, though I know that it has been suggested in England—doubtless in imitation of Tait's advocacy of the same heroic treatment in cases of placenta prævia. To my mind such a procedure must be classed in the same category with post-mortem Cæsarean section. The recovery of one case, though it reflects credit upon the skill and daring of the operator, does not recommend the operation. I have advised and performed laparotomy in three cases of rupture of the uterus which were still more desperate than those of accidental hemorrhage, but the conditions in the latter are different, since the hemorrhage is not intra-peritoneal but is taking place into a hollow viscus, and it



strikes me that Porro's operation would be rather severe treatment for that condition. Cæsarean section has been tried unsuccessfully, but I do not think it will ever become popular in this class of cases.

Dr. Reynolds is certainly to be congratulated upon the acuteness which he displayed in recognizing an evidence of premature detachment of the placenta, which would have escaped the majority of observers. The appearance of the peculiar projection at the side of the uterus could only be noted in subjects whose abdominal walls permitted thorough palpation. When the placenta was first detached at its edge, instead of at its centre, the cup-shaped cavity containing blood would not be formed, hence the projection would be absent.

## THE THERAPEUTIC ASPECT OF SOME OVARIAN DISORDERS.

BY EDWARD W. JENKS, M.D.,  
*Detroit.*

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THE brief paper which it is my desire to present on the above topic is not for the purpose of offering any new surgical operation or mode of treatment, but to direct attention to the merits and demerits of familiar and well-known modes of treating certain ovarian diseases. Since my first ovariectomy in 1868, I have, in each succeeding year, made various abdominal operations which are now classed under the one general title of laparotomy; and therefore I think it is not inappropriate for me to say that it is from the standpoint of the surgeon rather than that of the physician that the subject of this paper is considered.

It is generally conceded that it is mostly for the removal of the ovaries that laparotomies are made, therefore all references in this paper to abdominal surgery bear upon its relation to the ovaries or Fallopian tubes.

Many gynecologists have become distinguished in abdominal surgery, and it is with pride I state that nowhere else, in my opinion, are there to be found as many skilful and successful abdominal surgeons as among the Fellows of this Society, therefore I know I am not reading to reckless operators. It is an incontrovertible fact, however, that there are many reputable general and gynecological surgeons that are unsuccessful laparotomists, either by their inaptitude for that kind of surgical work or other causes needless to enumerate.

The brilliant achievements of abdominal surgery within the past few years have fairly astonished the medical world. Current medical literature teems with articles upon this topic with reports of cases and modes of operating. The percentage of recoveries, with successful operators, has become so large that its recital would have seemed a fairy tale in the days when some of the founders of this Society began their work in this field. But there is always a spot on the face of perfection. The outward appearance of ease, the repression of the many difficulties and much care by which these great percentages have been obtained, has been the *ignis fatuus* of the inexperienced.

While to do many operations and to have a large per cent. of recoveries is a laudable ambition, there is still a higher aim; that is, to cure the patient, and all of us know, if we were willing to acknowledge it, that to operate and to cure have not ever been synonymous terms. This is a central question around which many things turn.

In most towns of our country it is an unusual meeting of their medical societies where recently removed ovaries are not exhibited. This exhibition is not confined to special societies, nor, unhappily, to members who are known to be experienced laparotomists, but not unfrequently to physicians of limited experience in every department of medicine and surgery. The removal of a woman's ovaries seems to be looked upon as a trivial affair, a matter of such little importance that often a serious protest against this mutilation of women will be met with a flippant rejoinder. It is thus that abdominal surgery is brought into disrepute and sometimes valuable lives sacrificed.

This conviction, I think, was fully awakened some four years ago while in consultation in a remote district. The gynecologist (at least his professional card designated him as one) called my attention with considerable flourish to some ovaries and tubes in a bottle conspicuously placed on a table in his consulting-room; he informed me how he had arrived at a

diagnosis in this case, advised laparotomy, and then described minutely the *technique* of the operation. I was unable to observe, although it might have been shown by the microscope, any pathological condition calling for their extirpation. I supposed from the doctor's enthusiasm that the patient must have been correspondingly benefited, but in response to my inquiry on that point he replied: "Oh! she died on the third day."

There are undoubtedly many fatal cases of laparotomy of which there are no publications and of which the medical world has no knowledge. There are also many instances of recovery from operations where the patient is not benefited in the least; I am free to confess that I have had some in my own practice.

I am convinced from my own observation that some patients whom the gynecologist at the first examination believes can only be cured by the removal of one or both ovaries and tubes often recover while the operation is being postponed until a more convenient season arrives. I have seen this in so many instances, some having been referred to me for the purpose of being operated upon, that, day by day, the conviction has grown stronger upon me that an earnest plea for the salvation of ovaries should emanate from gynecologists, or, rather, laparotomists themselves.

The reason for calling attention to some of these points is that it seems as if the time had arrived when every conscientious physician and surgeon should endeavor to discountenance the removal of women's ovaries to the extent it is now practised, not only in our large cities, but in every village and farming community of our country, by every one considering himself capable of wielding a knife or tying a ligature. There would be less ground for this assertion if such surgical operations were confined to those who, by reason of education, observation, and experience, had become astute diagnosticians and skilful surgeons in this specialty. I have frequently heard it asserted, and it is doubtless true, that

many who are themselves successful have refrained from expressing their views in their own local medical societies as to the requisite qualifications of the skilful abdominal surgeon, lest they be considered egotistical or seeking to monopolize the surgical work of others.

I would not, if it were possible, detract a particle from the justly earned reputation of our distinguished countryman and the operation which bears his name, for I believe that Battey's operation is requisite in a limited number of cases, nor can it be denied that the ovaries and Fallopian tubes must in some instances be removed to secure the establishment of health; but is it not equally true that many women have been deprived of their ovaries without benefit, and many others advised to have them removed that have ultimately been restored to health without the knife being used?

It is not uncommon for us to learn more from our mistakes and errors in judgment than from our most brilliant successes, and from many of my own mistakes and errors I trust I have gained some useful knowledge; and my criticism, if it can thus be termed, is upon myself rather than others. I have removed ovaries and tubes for pain, but neither among my own patients nor any coming under my observation have the results been satisfactory. The same surgical operation for mental disorders has in my practice been scarcely more gratifying.

It is evident to me that anæmia, the multiform varieties of neurasthenia and hysteria, the part they play in the production of pain, and the mental and nervous disorders coincident with them, are often misleading, and thus laparotomy for relief among this class of patients often fails to accomplish the good expected of it.

It is an acknowledged fact that, in the past, thighs have been amputated for hysterical affections of the knee-joint mistaken for organic disease. Upon the statements of many laparotomists it can safely be said that ovaries and tubes have been removed for pain or other symptoms when neither

macroscopic nor microscopic examination indicated any diseased condition, and the patient restored to health in consequence. Is there not a psychical aspect to this question which has not heretofore been taken into consideration? As bearing on this point I will mention without comment a single case :

A lady suffering from hysterical symptoms, and worn from long-continued pain attributed to diseased ovaries, was advised by several whom she consulted to have them removed, and finally became the patient of one of my friends, a skilled and experienced surgeon, who concurred in the former opinions. After the abdomen was opened the surgeon failed to find after diligent search any pathological condition warranting his completing the operation he had begun, and closed the abdomen. The patient herself believed the ovaries had been removed. She not only rapidly recovered from the operation, but regained the health of former years, and in an unexpectedly brief time was free from all the pains and discomforts which preceded the operation.

My own observation has taught me that gynecologists, whose patients are mainly in general hospitals, are liable to hold different views regarding the necessity for removal of ovaries than do gynecologists whose patients are mostly other than hospital cases. The reasons for this are in the main two. First, in the general hospitals of large cities the majority of cases of ovarian and tubal disease are of gonorrhœal origin. Second, the patients are limited as a rule to the time of remaining in hospital, and will themselves often prefer a surgical operation as the quickest method of obtaining relief.

In further considering the subject I wish, as far as possible, to exclude hospital patients and speak of the disorders in question as they are observed among such as one sees in the consulting-room and at their homes, when full time and opportunity is afforded for the study of their cases. The late Austin Flint, of glorious memory, was persistent in the

opinion that to understand any form of disease one must be familiar with its natural history, otherwise the cause of recovery is wrongly placed. He referred more particularly to acute forms of disease, but it is no less important in those of indefinite duration. Nature is ever kind in disease, and instead of obstructing recovery is invariably aiding it. This is as true of disease in one part of the body as another.

In my opinion it must be the competent and conscientious gynecological surgeon who should decide regarding the necessity for laparotomy. The gynecologist who calls himself conservative because he never operates is rendered by virtue of that fact an incapable judge of the merits and demerits of important surgical operations.

The tubes being offshoots of the uterus, although differing somewhat from that organ in structure, must, through contiguity and continuity of the mucous lining, be affected in some degree by the same diseases which, as in other portions of the body, manifest themselves variously with the different tissues. The most common of all pathological conditions of the uterus is the simple catarrhal with mucous or even mucopurulent discharges, and is amenable to treatment. Why should not the same condition be frequently found in the tubes? As a matter of fact it is, although their deep situation and very indirect communication with the outside protect the tubes from so frequent catarrhal invasion as in the uterus. A simple catarrh of any mucous tract in the body, if neglected, often advances to the purulent stage. I have no doubt that in not a few cases operated upon where pus was said to be found in the tubes, the fluid was simply a mucous secretion slightly purulent, the result of an undiscovered or neglected catarrhal salpingitis, which would have been amenable to treatment in its earlier stages, and was not by any means hopeless at the time of operation.

As long-continued catarrh produces thickening of the mucous membrane, and also changes in the immediately underlying structures in other mucous-lined organs, why

should it not in the Fallopian tubes? The fearful frequency of gonorrhœal salpingitis has caused many to overlook the fact that there is any other.

A catarrh may be a purely local affection, or may be a local manifestation of a constitutional tendency, but in either case it is more or less amenable to therapeutic measures.

It is apparent to every close observer that there are many cases of pain of a neuralgic character in and around the ovaries, and yet there is no disease of them discernible. This condition is regarded by Olshausen, Charcot, and others as a hystero-neurosis.

While none can admire the feats of abdominal surgery of to-day more than I (and none be more ready to operate when other resources have failed), I still hold that it is a higher art, a finer science to restore an organ to moderate usefulness and comfort than to remove the offender, be it never so skillfully done.

Some ardent operators (removalists) have taken the treatment of necrosis of the tibia as a simile, and argue that if it is proper to remove diseased tissue in one place, it is just as proper in another. Now that is a very good argument, but carry it further, and it becomes one on the other side of the question. One does not amputate above the knee as the first procedure and as the most "conservative." Only after repeated gougings, long and persistent efforts to fortify the system against the encroachment of disease; after all means have failed, and the patient's life is about to be endangered, does the truly conservative surgeon amputate, and then without delay.

In the case of the uterine appendages, as in other deeply seated appendages, one attempts first to do by therapeutic and other measures what is attempted by purely mechanical means in case of dead bone; to endeavor to remove diseased tissues by producing change and repair, to compel the powers of nature to do by imperceptible processes what the gouge does in the hand of the surgeon—and more, for they can make



good the loss of tissue they have taken away. If faithful, persistent treatment cannot bring about the process of change and repair, then removal becomes the next consideration and of the first importance.

I have been convinced for many years that some of these cases have a malarial origin. In accordance with this belief I have treated some of them with success. For many years engaged in general practice, and living all of my professional life in a malarial region, I am somewhat familiar with the multiform manifestations of malarial diseases. I was, therefore, highly gratified when engaged in writing this paper to have the pleasure of reading a brief article by our accomplished secretary "On the Malarial Element in Oöphoralgia," in which the history of a case and its successful treatment with full doses of quinine is related, and certain conclusions are stated in Dr. Coe's usual lucid manner. He very clearly shows that while there may be in the outset ovarian congestion or some form of extra-ovarian disease, the malarial element may predominate and its elimination result in the cure of both the primary and secondary affections.

Ethics, as well as pure science, plays an important part here. It dictates in some degree the mode of procedure with this class of cases from the beginning of their career to the end.

In most things there should be but one rule of action for the conduct of the physician toward the rich and toward the poor; here, however, is an exception as regards women of the poorest class. They cannot afford the long time of semi-invalidism. Sterility is one of the troubles not much complained of, as they generally have all or even more children than they can properly care for, and no addition is desired. The quickest amelioration of their troubles possible is the thing most demanded. Therefore the physician should not hesitate long to operate after he has satisfied himself that the tubes and ovaries are seriously diseased.

As previously stated, I have no new surgical operations or

mode of treatment. My methods are simply those with which you are all familiar. It would be a work of supererogation, besides needlessly wearying you, for me to present here the minute details of treatment or reports of cases. I will, therefore, under this head confine my remarks to generalities. First of all, it is important to ascertain what lies back of and complicates the ovarian disorder by whatever name it is known, whether anæmia, neurasthenia, hysteria, malaria, etc. In other words, if we take a patient, she is entitled in the outset to a complete diagnosis, not only as to the condition of the reproductive organs, but the constitutional disorder which may cause or influence in any way the pelvic affection. Another essential matter is the avoidance of routine treatment, but it may be truly stated that correct diagnosis in each case precludes this. Complete diagnosis has other important bearings, not the least of which is the treatment. It is generally conceded by our brethren, the neurologists, that the requisite time for treatment of average cases of neurasthenia is not less than one year. If this statement is, as I believe, essentially true, then the logical conclusion must be that many ovarian and tubal disorders, associated as they unmistakably are with neurasthenia, cannot be abruptly cured by surgery, but time and judicious treatment will often bring about the desired result.

As tubes rarely rupture, but are more frequently drained by the uterine route, haste in their removal is not required.

I have a patient who has an anteflexion of the uterus (probably congenital), and has been for some time affected with salpingitis of gonorrhœal origin. About seven years ago her physician advised the removal of one or both ovaries, and several physicians have told her she could never become pregnant. I had myself considered an operation necessary. She is now pregnant (in the seventh month) for the first time, although married fourteen years. I cannot now discover any enlargement or tenderness about the tubes or ovaries, although it is possible that after the completion of her pregnancy they

may be found still in a diseased condition. There is now in her case every appearance of a spontaneous cure.

Constitutional treatment for coëxisting disorders, whether anæmia, neurasthenia, hysteria, etc., need not differ essentially from their treatment where other than pelvic diseases are present. There is, however, one class of remedies which seems particularly serviceable in quite a variety of conditions, which are usually designated uterine sedatives. Among these are viburnum, piscidia, apiol, some of the coal-tar preparations, bromides, etc.

The claim of certain electro-theraputists that their mode of treatment in pelvic diseases, particularly those embracing the ovaries and Fallopian tubes, is the most successful, and represents the most conservative method, does not seem to be borne out by facts. Cases have come under my observation where the passage of an electrode and a very mild galvanic current within the uterus has caused fresh accession of inflammation.

It is my own belief that electricity in the class of cases under consideration is a valuable therapeutic agent, but that its field is more limited than many have claimed for it. It is invaluable as a general nerve tonic, for the relief of pain, and the dissolution of pelvic exudates and adhesions.

Local treatment consists mainly in thoroughly but gently painting the entire vaginal vault with a saturated tincture of iodine every second or third day, and keeping up continuous pressure, which should not be painful, by means of wool tampons moistened with glycerin or not, according to the amount of congestion. It cannot be deemed inappropriate in this connection to mention the fact of the universal practice of saturating tampons with glycerin. Useful as it is ordinarily, there are some cases in which it is applicable only occasionally, and in others not at all. Its depleting properties are well known, yet it is used when the mucous membranes are already blanched, indicating not alone local but general anæmia, thus directly debilitating patients, while at

the same time other means are constantly being employed to overcome debility.

While writing the last lines of this paper I had the pleasure of reading the admirable essay by our distinguished fellow, Dr. Polk: "On Certain Operations Designed to Preserve the Uterine Appendages." This paper, with one or two others of recent publication, serve somewhat to show the trend of opinion among some of the more experienced and progressive gynecologists: that there is an effort toward a more pronounced conservatism in dealing with pelvic disease than has of late existed.

### DISCUSSION.

DR. ANDREW F. CURRIER, of New York.—I hesitate to open the discussion on this truly excellent paper, because there are so many others here of greater experience, who are much better able to speak upon it. I was reminded by Dr. Jenks's paper of one read before our meeting four years ago by a distinguished Fellow, Dr. Battey. In it he related his experience with this operation which has so often been associated with his name. It seemed remarkable that during the fifteen years that he had been practising the operation, he had performed it only fifty-four times. This limited number of cases is especially noteworthy when we consider with how many Dr. Battey must have been brought in contact, in which many others would doubtless have considered an operation advisable. Like the paper this morning, the experience related in Dr. Battey's paper teaches us that there is need, after these fifteen years of experience, of great care in the selection of cases if one would record good results.

The results which have followed this operation, it seems to me, need no apology. It would have been impossible for an operation from which such excellent results, such life-saving results, have flowed, to have reached its present state of development without some mistakes having been made.

One of the indications for the operation (so regarded at one time), which it seems to me may be considered as disposed of, is

mental condition. If I remember rightly, Dr. Battey in his paper referred to four or five cases in which he had performed the operation for that indication, and I believe that he regarded only one as having been cured. The same indication has been met by other operators with about equal results, so that this indication is now considered as practically excluded.

The operation must always, in the nature of things, be attended with surprises. Even those who, like Tait, are so familiar with the interior of the abdomen, speak of mistakes and surprises. Indeed, an operation of this kind requires the greatest amount of care and foresight in both the selection and management of cases.

DR. H. C. COE, of New York.—My conservative attitude toward this question has been sufficiently recognized, and when I say that I have receded somewhat from my former position, it need not be taken for granted that I am now an ardent advocate of it. Dr. Jenks seems to take the ground that there has not been very much improvement with regard to the removal of the appendages on clear indications during the last four or five years. That certainly is not true of New York. I think that every operator in that city will bear testimony to the fact that it is now quite rare to have specialists present at our society meetings ovaries and tubes which are not thoroughly diseased. I have sufficient confidence in the diagnostic skill of most of my colleagues to believe that it is the exception for them to open the abdomen unless there is well-recognized disease. I would like to put myself on record as bearing evidence to the fact that during the past five years there has been a marked improvement in the direction of conservatism.

There is one important point upon which Dr. Jenks has touched, and to which I shall only refer, as I am now writing a paper upon it. It relates to the serious complication of pregnancy often presented by diseased ovaries and tubes. I have seen two cases of ovarian abscess in pregnancy, and one case of laparotomy performed for this condition about three weeks after delivery, the patient narrowly escaping with her life. There is no doubt in my mind that a patient becoming pregnant while there is pus in her tubes, or while she has an ovarian abscess, is

exposed to very great danger. I believe that some cases of supposed puerperal sepsis are due to preëxisting inflammation.

With regard to the conservative operation on the uterine appendages, so ably advocated by our distinguished Fellow, Dr Polk: Martin, its originator, admits, after giving the statistics in eighty cases, that the results were not what he had expected. With regard to relieving symptoms, he notes that the pain frequently returned. Although pregnancy had sometimes occurred, in some instances he had to operate a second time for the removal of an ovarian cyst or diseased tube. Fränkel admits that the results have not been what he had expected. The trend of the discussion on Martin's paper seemed to be opposed to the conservative operation.

DR. J. M. BALDY, of Philadelphia.—In discussing a paper like this there is always a risk of being misunderstood. There is danger of confounding two distinct classes of cases: those in which there is no macroscopical change and those in which there is evident disease of the appendages. Both classes have been dealt with in the paper. It is not at the hands of Fellows of this Society, or of any other special societies, that to-day many laparotomies for the removal of healthy tubes and ovaries are being done; it is by general operators. Certainly, as has been said, gynecologists have improved markedly in that respect.

We are liable to be deceived regarding the nature of some cases. For instance, some years ago I examined a patient and detected what I believed to be tubal and ovarian disease, and advised an operation. About six months subsequently a surgeon in my presence opened the abdomen, and found the tubes and ovaries healthy. It happened to be one of those cases in which the pelvis was a very difficult one to examine. There had been great pain and suffering, yet the appendages appeared healthy both macroscopically and microscopically. However, the girl was cured from the day on which she was operated upon. I do not believe that the operation had any other influence than a moral one. Such cases ought not to be touched by the knife. They are purely neurological cases, and should be treated by the neurologist. Cases of insanity, neurasthenia, and those of a nervous or mental nature in general, ought not to be treated by a gynecologist.

cologist at all; they do not belong to him, and he will as often do harm as good.

It is a pretty sweeping statement, however, to say that they are all non-operative, for there is room for judgment in certain cases, but that judgment ought to be guided by experience. I do not believe that the non-surgical gynecologist is capable of passing the best judgment upon such cases.

Two pertinent questions were suggested by the paper: Are all patients who recover from the operation cured? Are all patients who get well after the operation cured by the operation? The reader of the paper answered those questions in the negative, and probably the experience of all will bear him out. In Philadelphia, where a great many of these operations have been done in the past, a goodly number of the patients return, showing no improvement whatever. Some few of them are cured, but the proportion of cures is so small compared with the others that they are hardly worth considering, especially if we bear in mind that most of the cases of cure owe the result as much to moral effect as to removal of the appendages. I think it is just as reasonable to turn a case over to the oculist in which there are eye symptoms, evidently due to the general condition, as to hand these cases over to the gynecologist because some of the symptoms are referred to the pelvic organs. In no class of cases will experience be of greater help to the gynecologist than in those under discussion. When we come to deal with women who have a well-defined disease of the pelvic organs, the case is different, and I believe in operating on such cases.

I confess that I draw a line between the wretched and poor woman and the well-to-do in the treatment of my cases. With some diseases a woman surrounded by luxuries can enjoy life by observing proper care, while under the same condition a poor woman's life would be made one of misery. She must go to the wash-tub, must work hard for a living, has no rest, and will in consequence have repeated attacks of peritonitis. The rich woman, with the same amount of disease, but having proper care, might never suffer from an attack of peritonitis, and if the attack should develop it might readily be controlled. In the case of the poor we are justified, I think, in running greater risk in operating.

There can be no question whatever but what the true death-rate from abdominal surgery is not told. Again, it is not the bad cases—the so-called “wrecks”—who die as a result of an operation. My observation teaches me that at least half of the deaths have occurred among strong, healthy women—women who could walk into the doctor’s office, being apparently in robust health; and they are strong and healthy, perfectly able to do their work. However, they complain, are examined, disease is found, an operation is performed, and they die; while others who have endured much, have been long sufferers, their constitutions, perhaps, having become inured to suffering, withstand the trials of an operation. The loss of healthy-looking women is to me one of the most distressing features of the whole story. If they had been spared the operation, they might have gone on to the menopause with only a moderate amount of suffering, and might then have been relieved. I have yet to see a woman who, having passed the menopause, suffered from any marked pelvic inflammatory trouble. That is a broad statement; but I have seen many patients at the public hospitals in Philadelphia, and yet have to see the first case. It seems to me that the cessation of the periodical congestion cures these women almost absolutely, and I believe that if we could artificially control this congestion, it would be a powerful factor in the cure of our cases.

DR. JENKS.—The remarks made have been very satisfactory to me. It is with these operations as it is with the use of the obstetric forceps. There is no argument offered against the use of the forceps; the trouble is that there are unskilled obstetricians. It might be said it is no argument against these operations that there are so many bad operators. Recognizing the influence which this Society exerts over physicians in all parts of the country, I had in writing the paper the hope that that influence would tend to prevent this operation from being performed by everyone. The brilliant success of an operation in the hands of a skilled specialist undoubtedly tempts some men to perform it who are not prepared to do it. If in some way gynecologists, and also conscientious physicians and surgeons, would firmly oppose that class of operations, or that class of operators, a boon would



be conferred on womankind. Two or three years ago a society met here, and the reader of a paper spoke of the harmlessness of an exploratory incision. I made the remark that I had known four deaths from simple exploratory operations. The author replied that the gentleman who performed the operation must have been a poor surgeon. That is very true, and what I would do would be to prevent as far as possible such poor surgeons from doing the operation. Men who have seen these operations over and over again are the only ones who should dare undertake them.

I am very glad to hear from Dr. Coe that in New York these things are done away with ; that operators do better. Of course, we expect in the great metropolis of this country that there should be more knowledge, and I trust that kind of knowledge will make its way to the hamlets of the country through the efforts of this Society.

## INSANITY FOLLOWING GYNECOLOGICAL OPERATIONS.

BY J. M. BALDY, M.D.,  
*Philadelphia.*

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So often has the reproach come to my ears, that our almshouses and asylums are full of insane women whose mental condition was due to gynecological operations, that I became somewhat curious on the subject and determined on finding out how much truth there might be in these rumors. Up to the time of beginning this investigation I had personally not seen a single case of the kind, and could not bring myself to believe that they were of such frequent occurrence. As might have been supposed, these rumors were proven to be as unfounded as they were malicious. Each of the large insane hospitals in the State of Pennsylvania were communicated with, and answers more or less satisfactory were obtained from all but the State Institution at Harrisburg. The information sought was "whether any female patients had been admitted to the hospital within the past five years on whom a laparotomy had been performed and in whom insanity had followed." In some instances the question was misunderstood, and cases in which the operation had been performed for the cure of preëxisting insanity were included. I give the results of these inquiries as they were received:

*Harrisburg State Hospital for the Insane.* No answer.

*Danville State Hospital for the Insane.* Dr. S. S. Schultz states that "so far as I am aware no patient was ever admitted into this hospital upon whom a laparotomy had been per-

formed, with one exception." This exception was a young woman who had been addicted to self-abuse for years, and on whom an operation had been performed for acute maniacal excitement. Both ovaries were removed. The woman subsequently recovered her health and returned to her husband.

Since receiving this report I understand there has been another case at this hospital, but am unable to state the particulars.

*Warren State Hospital for the Insane.* Dr. John Curwen writes: "You may think it singular, but out of 376 female patients in this hospital we have not one who has had an abdominal section." He subsequently informed me that this statement applied to his experience both at the Warren institution and to the one at Harrisburg, with which he was formerly connected.

*Western Pennsylvania Hospital for the Insane (Dixmont).* Dr. H. A. Hutchinson informs me that during the period of his residence at this institution but two patients have been treated on whom an abdominal section had been performed. In both instances the operation was made for the cure of preëxisting insanity, but each time it failed in its purpose.

*Insane Department of Blockley Almshouse.* Dr. Hughes states that since 1883 they "have never had a single patient in the house on whom an abdominal section had been performed."

*Pennsylvania Hospital for the Insane (Kirkbride's).* Dr. Edward Brush has informed me that he cannot state positively, but that he is strongly of the opinion that but two women have been admitted to this institution on whom an abdominal section had been performed. Whether the operations were made prior to the existence of the mental condition was also uncertain.

*Norristown State Hospital for the Insane.* Dr. Alice Bennett writes that they have had five patients in the hospital on whom laparotomy had been performed. The first woman

was a patient of Dr. H. A. Kelly, who informs me that there was no previous history of insanity. He attributes the result to the shock of the operation, the symptoms having begun to develop two weeks later. The operation was performed for a large ovarian tumor. She died five months later without any change for the better in her mental condition. It has been ascertained that several cousins on her mother's side of the family had been insane.

The second case was a patient of Dr. J. Henry C. Simes, who informed me that there was a history, both family and personal, free from any tendency to insanity. He attributes the result to the operation, the symptoms beginning to develop two weeks afterward. The operation was performed for incurable metrorrhagia, both ovaries being removed. She is still mentally weak.

The third case was a patient of Dr. W. C. Hollopeter. She was married at the age of sixteen years, and had been an intense sufferer since. There is no history of previous mental disturbance either in herself or in her family. The operation was performed some three years ago for double adherent salpingitis and ovaritis. Some four months later, while away from home, her insanity gradually developed and lasted over a course of several years. She is now well and better than she has been since her marriage.

The fourth case was a patient of Dr. E. E. Montgomery. Some years before the operation she had been in an asylum for mania, but had been well, at the time of the operation, for several years. Both ovaries were removed. She was in good health for a year, when she developed insanity. She is still far from herself.

The fifth case has a bad family history as to insanity. She had been insane some time before the operation, which was performed, under protest, by Dr. Charles Meigs Wilson. Both ovaries were removed. At the present time (October, 1890) the patient is practically well.

*Friends' Asylum for the Insane.* Dr. H. A. Tomlinson sends

me the histories of the only three cases in this hospital. The first case is the same as No. 3 in the report of Dr. Alice Bennett from the Norristown Asylum.

The second case—a patient of Dr. W. Gill Wylie—had been insane for some years previous to the operation, and has not been benefited by it.

The third case was a patient of Dr. Paul F. Mundé. She had no previous history of insanity, nor can any be obtained for her family. Both ovaries were removed, and her mental condition developed two weeks after the operation. She has become gradually worse, and in November, 1890, was considered hopeless. Dr. Leigh writes me in behalf of Dr. Mundé that the operation was not a severe one, and he does not attribute the result to the operation.

*Burn Brae, Clifton Heights.* Dr. I. W. Phillips states that they have had but three women in the house on whom abdominal operations had been performed. All three had pre-existing insanity, and the operation was in each instance undertaken for its cure by Dr. William Goodell. One case was cured; the other two were not benefited.

An analysis of the reports of these eight institutions shows a total of fifteen cases, eleven of whom had preëxisting insanity. The operations in the eleven cases were for the most part undertaken for the cure of the mental condition. It is of passing interest to note that in only a small proportion of these cases did any good result, and even here it is doubtful if the operation was the sole factor in the relief obtained. The insane hospitals in the State of Pennsylvania, in spite of all that has been said to the contrary, can muster but four female patients mentally sound on whom an abdominal section has been performed and insanity has followed the operation. Of these four cases one died, one recovered, and two are still insane.

As a matter of fact, mental disturbances following gynecological operations are much more frequent than is generally supposed. Many of these are of minor degree, or they re-

cover so quickly that it does not become necessary to incarcerate the sufferers in an asylum. A certain proportion of the more severe cases terminate fatally with great rapidity.

In 1888, Ill (*Pittsburg Medical Review*, January, 1888) reported three cases of insanity following operation, and presented a collect of seven additional ones. In 1889, Thomas (*Medical News*, April 1, 1889) reported six similar cases and collected twenty others (including the ten reported by Ill). Keith (*Medical Press*, October 15, 1890) reported that of his sixty-four cases of hysterectomy, six had resulted in insanity, three acute and three chronic. Tait (*Medical News*, September 27, 1884) in his first 960 laparotomies met with seven cases of acute melancholia. Robert Barnes states that Sir Spencer Wells had twice during convalescence after ovariectomy seen maniacal attacks. Savage met with this condition three times in 483 cases. I have myself met with two such cases and am cognizant of a number of others which have not yet been put on record.

The first case I met with was somewhat over a year ago. The patient had a torn perineum, complicated by rectocele and cystocele. The parts were repaired by Dr. T. Hewson Bradford, with my assistance. Ether was the anæsthetic used, and the woman was under its influence for over an hour. Immediately upon being put to bed, dry heat was applied by means of hot bottles. The nurses were inexcusably ignorant and careless, and in consequence the patient was most horribly burned in half a dozen places. The burned points sloughed deeply and were several months in healing. Toward the end of her illness she began to develop peculiar symptoms and rapidly ran into a condition of melancholia with suicidal and homicidal tendencies. So marked did these become that it was necessary to send her to the Pennsylvania Hospital for the Insane, where she still remains. I am informed that she is perfectly well and will be discharged within the next few weeks. There is no family history of insanity in her

case, nor did she ever show any previous tendency to the disease.

My second experience was with a patient sent me by Dr. Joy, of Atlantic City. The woman was married and about thirty-five years old. She had had one child early in her married life, a bad laceration resulting from her labor. Since this accident she has been a constant sufferer. Her menstrual periods came every three weeks and lasted four or five days, although they were scant. During these periods she had peculiar attacks. She would get what she called "screaming spells." These consisted of periodic outbursts of the most terrific screams, accompanied by violent contortions. These "spells" seemed to be entirely independent of her pain, which was very great. She had on several occasions, during a menstrual period, left her bed and appeared on the streets in her night-clothes, screaming at the top of her voice; in fact on one occasion she was threatened with arrest for indecent exposure. It has been subsequently learned that she had been an inmate of the University Hospital and was refused operation on account of a violent attack which kept her confined in a cell for six weeks or more. During her menstrual periods she was in the habit of taking large doses of morphia, but her doctor informed me that she would refuse it at other times. From other sources I have reason for believing that she was in the habit of taking it on her own responsibility.

It was thought that a thorough dilatation of the cervix might relieve her sufficiently to save her an abdominal section, but a most careful search for the os, with the woman under the influence of ether, failed to reveal it. The uterus was large, high up, and fixed. The appendages could not be outlined. The reason of this was easily understood, as there were four inches of fat on the abdominal walls. She was allowed to recover from the effects of the ether, and the same night had a "screaming spell." For the next few days she remained perfectly well in every way. Morphia had been refused her, except on one occasion, from the day she entered

the hospital. With the exception of sleeplessness for several nights this seemed to have no bad effect. An abdominal section was made with the idea of removing the ovaries and bringing on the menopause. The operation was an extremely difficult one. Both ovaries and tubes were bound down. The tubes were in a condition of chronic adherent salpingitis; the ovaries each contained blood cysts the size of walnuts. The enucleation was made with great difficulty and the ligatures were applied at least three or four inches below the skin surface. I thought at one time that I should fail in accomplishing my object. The woman recovered slowly from the anæsthetic, and it was soon afterward evident that she was not in her right mind. For the first thirty-six hours she gave considerable trouble, but after this became brighter and more quiet; so much so that we thought it safe to move her into the ward. The same night she was moved she had a violent attack and it became necessary to isolate her once more. For several days she was noisy, incoherent, and cyanotic by spells. Her eyes were dull and she appeared most of the time to be in a dazed condition. About the sixth day she began to be more and more restless and finally broke out into wild maniacal attacks. She was so violent that it was necessary to strap her in bed. From this time until the end, which was two days later, she became worse and worse. Her struggles and screams were terrific; she could be heard for squares. Drugs seemed to have little influence on her. Morphia, bromide of potash, chloral, ether, hyoscin, and other remedies were used freely, but failed to quiet her, or only did so after having been pushed to the danger-point, and then merely for the time. Throughout her whole illness her abdomen remained flat, her temperature and pulse were normal, she ate well, her bowels moved freely, and she passed her urine in normal quantities and at proper intervals. As the end drew near her struggles became more violent, her pulse and temperature began to rise. Finally her pulse became so rapid and feeble that it could not be counted, and a few hours before her death



the thermometer registered  $108^{\circ}$  in the folds of her neck. A post-mortem examination of the abdomen was alone allowed. The seat of the operation was in perfect condition and there was not the slightest sign of any intra-abdominal trouble. The woman died either from exhaustion or from apoplexy. At the time of the autopsy, blood was running freely from the nostrils; this, in conjunction with the fact that the local congestion during the paroxysms was so great, made me think that the latter might have been the determining cause of the death.

These unfortunate results seem to be unavoidable and as yet no one has succeeded in suggesting a reasonable cause for them, although many theories have been advanced. One is apt with a limited experience (and any single experience must of necessity be limited) to attribute these accidents to some one cause, when, as a matter of fact, several factors are almost certainly at work in each case. For instance, it has been asserted that all these cases must have had a previous history of mental trouble, or else the family history was bad or doubtful in this respect. But a careful study of the cases reported by different observers will render it plain that such an explanation is admissible in but a small proportion of cases. In the same manner the influence of different drugs which have come in for their share of blame, may be almost certainly eliminated. In some cases no drug whatever has come in contact with the wound. In no single case is there any conclusive evidence that medication has had any influence in the matter. If fear or dread of the operation had more than an incidental influence in bringing about the result, the proportion of these accidents would be infinitely greater than they are both in the male and in the female. Sepsis in a certain proportion of cases may be looked upon in the light of a cause, but the number of cases in which this is true must be exceedingly small. In many it is not even possible to consider sepsis. My own case, following laparotomy, for instance, occurred immediately, and there was absolutely no

chance for such an agent to act. Chronic alcoholism is such a common condition with hospital cases that if this were a common cause one would look with certainty for a larger number of bad results than have already occurred. Although all these factors may theoretically have their influence, yet a study of the existing cases show a very small proportion in which it is at all probable that such was the case. The theory advanced by Mary Putnam Jacobi, viz. : "Dilatation of the bloodvessels of the abdomen from reflex inhibition of the splanchnic nerve," seems to me to be unreconcilable to the facts. There is no good reason for supposing that insanity follows operations on the peritoneal cavity from an entirely different cause than is at work in the case of operations on other parts of the body—and it is a well-known fact that general operations are more frequently followed by this result than laparotomy. Any attempt to offer an explanation for any particular group of cases to the exclusion of all others can only lead to false conclusions. Fillebrown and Prochownik (*American Journal of Obstetrics*, January, 1889) hold "that the mental disorder is produced by reflex causes arising from the healing processes subsequent to injury to the peritoneum." This explanation is not dissimilar to the one offered by Mary Putnam Jacobi. They go more into detail, however, as to the exact cause of the irritation; but the objections to it are precisely similar to those in the former. The attempt is made to explain a certain class of cases, where the explanation will not hold good for any other case. But even as applied to laparotomies, the theory is too faulty to stand examination. In three of Fillebrown's cases there "was an exudate with a rise of temperature after the operation. These exudates were referable to inflammations around ligatures, or to small after-hemorrhages into the peritoneal cavity. The protracted irritation to the peculiarly sensitive peritoneum and its neighborhood, so rich in nerves, finally accumulate, and, having reached a certain degree of intensity, ultimately exerts its influence upon the central nervous system." It is

to this concentration of peripheral irritation that they ascribe the outbreak of the mental derangement. How can the cases which occur almost immediately after the operation be reconciled with this theory? Is it altogether true that the peritoneum is such a sensitive membrane and so richly supplied with nerves as we have been in the habit of stating? Is there not more or less exudate in every case in which a ligature has been applied, and are not these cases of insanity comparatively rare? Finally, do not only too many cases of small and in fact large after-hemorrhages, as well as suppuration and extensive exudations, occur without any sign of mental disturbance?

It seems to me that no one of the causes advanced is sufficient to account for these distressing conditions, nor would a combination of them have a direct influence in this direction. The only explanation possible would appear to be the existence of some peculiar condition of the nervous system. This being present, one or more of the factors under consideration are sufficient to cause an explosion. The elements which undoubtedly have the greatest influence in determining the result in the cases occurring immediately after operation, are the anæsthetic and the shock of the operation. The determining causes of the cases which only develop weeks or months after an operation has been performed are not so easily found. What this condition of the nervous system is, and how it may be recognized prior to an operation is, for the present at least, not known. Where there has been either a personal or family history of mental disease, an operation should only be undertaken with a full understanding of the possible outcome. This factor of preëxisting tendency to insanity cannot be overlooked. It may be that a patient has never shown any palpable symptoms of this disease, but who can say that the seeds of the trouble do not exist? Those who cling to this theory certainly stand on strong ground, and their position is hard, nay impossible, to assail.

It is well known that women undergoing the change of

life are often subject to mental depressions and irregularities. In a few cases it is easy to imagine that the abrupt setting in of the menopause, due to the removal of the ovaries, is the cause. But then some of these patients have only had one ovary removed and in others the operation has been a plastic one and both ovaries are intact. Nor am I willing to concede, as some contend, that operations on the genital organs have a peculiar tendency in this direction; nor is the complication peculiar to operations on women, and their finer nervous organization. Mary Putnam Jacobi several years ago pointed out the fact that almost all works on surgery describe this condition under the name of "traumatic delirium," and she quotes a large number of authorities on the subject. The only series of cases which I have been able to find from which a comparison could be made, is contained in a yet unpublished paper by Dr. Joseph Leidy, Jr. (*Philadelphia County Medical Transactions*, 1891), the MS. of which has been kindly placed at my disposal. The cases were consecutive ones, observed personally by Dr. Leidy during the past four years in his services at the Pennsylvania and University of Pennsylvania Hospitals. All cases of operation on or about the head have been excluded. In but one case was there an inherited tendency to insanity. In no case was there any previous tendency to this disease. There are in all eighteen cases; of these, ten were males and eight were females—the proportion of men being greater than that of women. In not a single case of the ten men was the operation on the sexual organs. Of the eight women, four were breast cases and all were operated on for cancer of that organ. Of the remaining four women, two had operations on the sexual organs, one an amputation of the hand, and one a double amputation of the legs. From this analysis it will be seen what a small part the sexual organs play in the production of the mental disturbances. All of the breast cases were operated on for malignant disease. These cases

are notoriously in a bad general condition, and, as a rule, do not stand operations as well as non-malignant cases. It is much more probable that the general bad condition influenced the result, rather than the fact that the operation was on a part of the sexual system—if the breasts can truly be classed as such.

Although cases of severe mental disturbance do not occur with alarming frequency, yet a goodly number have been recorded, and there are many unrecorded ones. The form generally taken seems to be melancholia, but acute mania is not unknown, as my own case proves.

The prognosis is by no means certain. The majority of patients recover, but this is not an invariable result. The patients of Simes and Mundé are still insane. Kelly's patient died after five months' illness. Keith lost two, Thomas four, and Tait "a good many." My own patient died after eight days of acute mania.

As a matter of fact this whole subject remains obscure, but there are certain definite conclusions to which we can arrive, and on which future observations can be based.

1. Cases of serious mental derangement may occur after operations on patients without any previous personal or family histories of insanity.

2. Mental disorders are no more likely to follow operations on the sexual organs than on any other part of the body.

3. Such disorders occur just as frequently in men as in women.

4. Operations are at times the determining cause of mental derangements where there was no previous tendency to the disease.

5. Mental disturbances occurring a considerable time (months) after an operation are most probably independent of the surgical procedure.

6. The development of psychoses may follow in those cases

in which the convalescence from the operation has been perfect.

7. The existence of a predisposition to psychoses should stay the surgeon's hand, except in such cases as are urgent and necessary.

8. Mental derangements follow operative procedures with more frequency than is generally supposed.

A CLINICAL STUDY OF PRIMARY CARCINO-  
MATOUS AND SARCOMATOUS NEOPLASMS  
BETWEEN THE FOLDS OF THE BROAD  
LIGAMENTS.

WITH A REPORT OF CASES.

J. E. JANVEIN, M.D.,  
*New York.*

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IN presenting this subject I am aware that I am dealing with a condition which has seldom been reported up to the present time, excepting those cases in which the malignant growths have been noted *in* the ovaries. In fact, the only case that I have met with is one of "primary sarcoma of the tubes," reported by Sänger in the *Centr. für Gyn.*, 37, 1886, and which at that date Sänger affirms "is the only one on record." If other cases have been *reported* they have escaped my notice.

The three following cases have occurred in my practice during the past three years, and the specimens have been subjected to the most careful examination, and both the clinical history of the cases and the microscopic examination seem to me to fully prove the statement here made, viz., that malignant neoplasms, other than those of the ovaries, sometimes do occur *primarily* between the folds of the broad ligaments.

CASE I. *Composite myxo-sarcoma of right Fallopian tube.*—Mrs. B., aged thirty-six years, married fifteen years, no children; says that she had a severe attack of pelvic peritonitis

about twelve years since. During past six months has been steadily losing strength and flesh. Early in October, 1888, I was called to see her, and found her suffering from a severe attack of congestion of the pelvic organs. She informed me that she had been under the care of a female homœopathic practitioner for several weeks, and that the treatment had been "ergot injected (*per vaginam*) into a uterine fibroid, and also vaginal tamponing with cotton saturated with glycerin." Her attendant being out of town, I had been sent for to relieve the urgent symptoms. I found a thoroughly enlarged right Fallopian tube, also intense congestion of the pelvic organs, but no fibroid. The usual treatment for such congestion relieved it within a few days. On leaving the case I advised the patient to permit no more injections of ergotin into the supposed "fibroid," but, if the enlarged tube continued to give serious trouble, to have it removed in the immediate future.

Three months later, January 7, 1889, I was again called to see the case. I learned that the glycerin tampons had been used constantly during the three months; the injections of ergotin had been dispensed with (none having been used since I had seen the case in October). At this date (January 7th) the "fibroid" had been pronounced "cured" by the homœopathic attendant. The patient, however, had steadily and rapidly failed in every way and was suffering excruciating pain daily. She had therefore decided to change her attendant.

On examination the right Fallopian tube was found greatly enlarged, fully five inches in length and from two to three in diameter, extremely tender, tense, and but slightly movable. The patient had become habituated to large doses of morphine. Diagnosis: pyosalpinx, with acute congestion of all the pelvic viscera, and the tube probably impervious and greatly distended. Advised removal of the tube as soon as the patient could be gotten into suitable condition for the operation. Laparotomy performed January 30th. Operation strictly aseptic and lasted nearly one hour. Slight hemorrhage from a few small adhesions controlled by catgut ligatures. Pedicle, after ligation, touched with pure carbolic acid and dropped. The right tube was removed and found to be rather firm and apparently solid; did



not contain fluid of any kind. Left tube apparently healthy and therefore not disturbed. Abdominal cavity perfectly clean. Incision closed, no drainage. Patient reacted well, but within three hours complained of excruciating pain at the "pit" of the stomach. Passed a somewhat restless night notwithstanding I had given morphine hypodermatically at 9 P.M. (one-third grain). At 9 A.M., 31st, the temperature was normal, but pain severe, and morphine was repeated. During night had taken by mouth a few teaspoonfuls of hot water. Nutritive enemata of peptonized milk and whiskey given every six hours during the 31st.

At 6 P.M. temperature had risen to  $103\frac{1}{2}^{\circ}$ , pulse 120. Anti-febrin (5 grains) and frequent sponging of face and hands with ice-water. At 10.30 P.M. pain very severe and patient very restless. Gave one-third grain morphine hypodermically. Slept fairly well until 8 A.M., February 1st, when she vomited slightly. Nutritive enemata continued during the day, temperature falling and ranging from  $99^{\circ}$  to  $100^{\circ}$ . At 9 P.M. she vomited suddenly and freely, and with a pronounced fecal odor. Gave saline cathartics by the mouth, also stimulating enemata carried high up by rectal tube, to induce movements of bowels. All attempts, repeated frequently during the night, to move the bowels proving unavailing, I feared there might be some septic material in the abdominal cavity. As the patient was sinking rapidly, I determined to open the cavity and investigate. Placing the patient upon her right side, and under chloroform, I removed the two lower sutures and gently separated the edges of the wound. There was no evidence of *septic* condition (as far as this examination could disclose). The edges were closely approximated and the dressings reapplied. The vomiting continued during the day and the patient died at 4 P.M. Examination showed a moderate amount of simple, plastic peritonitis, no septicæmia, and no occlusion of the intestines.

The fatal issue in this case I attribute in part to the peritonitis and in part to a condition of total paralysis of the digestive and assimilative functions due to the shock of the operation and to the extremely exhausted condition of the

patient before the operation, and also to the injurious effects of the large quantity of morphine taken during the six months prior to the operation. I believe that this morphine habit had as much to do with the paralysis of the functions of digestion and assimilation as the extremely exhausted condition of the patient and the slight peritonitis following the removal of the growth. The peculiar appearance of the specimen, its almost solid structure, and the absence of *any* accumulation of any kind within its lumen marked it as a growth of peculiar character. Together with this, the extreme suffering and rapid emaciation of the patient indicated something more than an ordinary inflammatory product, and seemed to point to a malignant growth. The specimen was carefully examined by Dr. William H. Porter, pathologist of the New York Post-Graduate School, and he submitted the following report :

*“Composite myxo-sarcoma of the right Fallopian tube.—*The macroscopic appearance of the specimen for examination was that of a cylindrical mass about five inches long and two inches in diameter. It was semi-solid and slightly gelatinous in consistency. The original lumen of the Fallopian tube was dilated and empty. There was no evidence of its having contained blood, serum, or pus, and still the lumen of the tube was nearly an inch in diameter. The uterine and peritoneal ends did not appear to be occluded, but were very much constricted as compared with the central portion of the canal of the tube.

“Upon microscopic examination the epithelium lining the tube appeared to be in fairly good condition, and there was no positive evidence of a catarrhal salpingitis. The cut surface of the neoplastic tissue around the tube appeared very much like that commonly seen upon the cut surface of leio-fibroma which is undergoing myxomatous degeneration.

“Microscopic examination of the new formation revealed a large variety of connective-tissue formations. There was a slight hypertrophy of both the circular and longitudinal smooth muscle fibres which enter into the construction of the tube. There was

also a moderate increase in the white fibrillated connective-tissue bundles between these muscles. The small arteries in some places were thickened and surrounded by infiltrations of round cells or leucocytes arranged in a concentric manner common to syphilitic affections. There was also some endothelial proliferation. While some parts of the section strongly resembled a syphilitic infiltration, there was no hyaline transformation in the vascular walls and nothing that would positively mark it as syphilitic.

“At other points there were spots of well-defined connective-tissue corpuscles imbedded in a homogeneous matrix, and presenting all the appearances which are common to a spindle-celled sarcoma. At other points a similar kind of tissue was found, but of the small, round-celled sarcoma type. At still other points there was the soft, gelatinous, semi-solid matrix common to myxomatous tissue. In these soft masses all kinds of connective-tissue corpuscles were found, the many-tailed cells predominating, so that the sections presented the appearances commonly described as characteristic of myxomas, or net-celled sarcomas.

“The general histological construction, however, of this newly developed tissue would argue against its being classed as an inflammatory growth, but would place it among the mixed connective-tissue growths. Owing to the large variety of histological elements found, it is impossible to give a *single* name which will in any adequate manner express the condition.

“It may well be classed under one of two headings—either as a composite fibro-sarcoma, or as a composite myxo-sarcoma, the latter being the more accurate of the two.

(Signed)

“WILLIAM H. PORTER, M.D.”

CASE II. *Primary carcinoma of the parovarium.*—Mrs. W. S. C., thirty-seven years of age, married, the mother of one child ten years old; no other pregnancy; came under my observation the latter part of November, 1890. Eighteen months previously she began to suffer from pain in the pelvic region, especially on the left side.

There had been no irregularity of menstruation, and, in fact,

no symptoms present except the pain, which at times was severe, and a gradual decline in strength and health.

Her physician, on making a local examination, thought he found a small sub-peritoneal fibroid, and began at once the use of galvanism. This was kept up for some months with no apparent effect, the pain and growth gradually increasing.

This treatment was stopped in the spring of 1890, the patient going to the country for the summer. She reports that her weight in September was one hundred and forty pounds, having gained a few pounds during the summer.

When first seen by me (November 30th), her weight was about one hundred and fifteen pounds. She was anæmic, cachectic and suffering continuously from pain in the region of the left tube and broad ligament.

Examination revealed a mass as large as a goose-egg in the region of the left broad ligament. Also a smaller mass to the right of the uterus (the uterus itself being perfectly normal). That upon the left was perfectly firm and hard, and not at all movable; that upon the right semi-elastic and slightly movable.

*Diagnosis:* Small ovarian cyst of right side. Solid growth, possibly malignant, involving tube or ovary, or both, of the left side, and the growth held firmly by adhesions.

*Recommendation:* Laparotomy at the earliest date possible. Patient took a month in which to consider the subject, and on January 6, 1891, entered my private hospital for the purpose of having the growths removed.

During this interval the pain had been constant and, at times, intense, and she had lost some fifteen pounds in weight (weighing but one hundred pounds), and her general condition was very bad, showing quite markedly the cachectic appearances so characteristic of malignant growths.

Laparotomy performed January 8, 1891, two days after admission to hospital. Operation simple, except as complicated by the adhesions surrounding the growth situated in the left broad ligament. The neoplasm removed from the right pelvis was a small polycystic ovarian tumor, size of a hen's egg, and was removed without difficulty. The neoplasm to the left of the uterus was perfectly hard and solid, about the size of a small

orange, and apparently implicating the whole broad ligament and ovary. It was so firmly bound by fibrous adhesions to the pelvic bones and to the lower portion of the sigmoid flexure that its removal was accomplished pretty slowly. Still the operation was completed, and the patient transferred to bed at the end of an hour and fifteen minutes.

The bleeding vessels were mostly controlled by catgut ligatures; but some oozing continuing from the torn surfaces deep in the pelvis, after thoroughly flushing out the cavity with sterilized water at 115°, iodoform gauze was packed into this pocket, and brought out through the lower end of the abdominal incision. The operation was performed strictly aseptically.

The patient's *morale* before the operation was anything but satisfactory, she having expressed herself to her husband and relatives as being certain that she would succumb to the operation. Reaction was fairly good within six hours. Everything seemed favorable to recovery during first forty-eight hours. Pulse and temperature nearly normal. No nausea or tympanites. The gauze drained the abdominal cavity of the serum slightly tinged with blood. Bowels moved quite freely at the end of twenty-four hours by Seidlitz powder, given some twelve hours after the operation, and followed by stimulating enema. No symptoms of peritonitis or septicæmia. Nutritive enemata given at regular intervals, beginning twenty-four hours after operation.

Notwithstanding the apparently perfectly satisfactory condition of the patient up to the end of the second day, she then began to fail rapidly, and died on the evening of the following day, apparently succumbing to simple exhaustion.

Post-mortem showed nothing whatever that could be accredited as the cause of death. The abdominal cavity was perfectly sweet and clean, the oozing having ceased the day before death, and the serum having been carried off thoroughly by the gauze. There had been no peritonitis or sepsis.

The following report by Dr. William H. Porter is a very thorough and careful study of the pathological conditions

found, and shows conclusively the malignant character of the neoplasm of the left broad ligament :

“*Primary carcinoma of the parovarium.* Report upon the specimen removed from the pelvic region of Mrs. W. S. C. :

“The neoplasm which was removed from the right side, in the vicinity of the ovary, is unquestionably a simple polycystic growth which originated in the ovary of that side. It has completely displaced the ovarian tissue.

“The neoplasm which was removed from the left side is a very complex growth. It did not originate in the ovary proper, but between the folds of the broad ligament below and to the inner side of the ovary. At the same time no ovarian tissue can be found in the mass which was removed with the neoplasm proper, and it has every appearance of having originated near the ovary and of having completely destroyed its structure, so that nothing remains by which the ovary can be identified.

“Taken as a whole, the macroscopic appearances of the new-growth are those that are common to an ordinary leio-fibroma, both as regards consistency and color.

“It was not possible to establish any direct communication between the interior of the neoplasm and the lumen of the Fallopian tube. The latter, however, appeared to have been dilated, but without any direct relation to the central portion of the new-growth.

“Upon microscopic examination the sections were found to contain a moderate amount of smooth muscle fibres and an abundant formation of new tissue composed almost exclusively of the connective-tissue substance group of tissue formation. In some places the spindle-celled connective-tissue corpuscles predominated, at others the round-celled connective-tissue elements were in the majority. Other portions were composed of a decided mucoid-like tissue substance which contained a varying number of the stellar or many-tailed connective-tissue corpuscles. Although some portions of the neoplasm resembled very closely a spindle-celled sarcoma, others that of a round-celled sarcoma, and still others a myxoma, or net-celled sarcoma, the sections taken as a whole did not give the impression that they were made up from a neoplasm which could be, in the strictest

sense of the word, called a sarcoma; neither did they give the impression of having been cut from a truly inflammatory, tubercular, or syphilitic type of tissue formation. On the other hand the sections presented appearances which would lead to the supposition that some form of local irritation—but not of specific origin—had disturbed the equal and uniform distribution of the nutritive supply to the part and caused an *irregular* supply which had resulted in this unequal development of the various forms of connective-tissue substance formation, the result of which was, that no particular kind of tissue predominated with sufficient uniformity to give to the neoplasm any distinctive characteristic by which it could be specifically named in accord with our present nomenclature.

“Scattered throughout the section, at irregular intervals, there were found small extravasations of blood corpuscles, also small zones and streaks of blood pigment, which, together with the larger cavities containing the remnants of blood, suggested a primary injury as a causative agent in producing this peculiar neoplasm.

“That the parovarium was entirely involved was quite apparent from the dilated condition of its tubular structure and the enlargement of the contained epithelial cells, but the microscopic appearances were those of an adenoid hypertrophy of the organ and not of the cylindrical-celled epithelial carcinomatous class of growths. The extensive connective-tissue formations of the embryonic type pointed *away from*, rather than toward, a carcinomatous growth.

“These conditions, however, did not clearly explain the apparent malignancy of the disease; and the active and extensive changes of an epithelial character in the parovarium also suggested a more malignant nature.

“New sections were made from various parts of the neoplasm, and finally a few small zones were found in which the perivascular or lymphatic spaces were dilated and filled with epithelial cells. These epithelial corpuscles were packed into these elongated and irregular alveolar spaces without any definite order of arrangement and without any distinct intercellular substance.

“This positive type of pathological formation, together with

the changes in the organ of Rosenmüller, unquestionably stamp a portion of the neoplasm as carcinomatous in character, which, in the absence of a similar growth in any other part of the body, must have originated in the epithelial structures in the parovarium as a cylindrical-celled epithelial carcinoma.

“Although the larger part of the section resembled an adenoid hypertrophy, there was a point which was distinctly carcinomatous in character, otherwise this carcinomatous infiltration of the lymphatics would not have been developed.

“The remaining portions, which formed the larger part of the neoplasm, were distinctly composed of the connective-tissue type of formations, largely embryonic in character, and strongly resembled that class of growths commonly described as sarcomata. But the irregularity and complexity of its formation showed at once that it should not be classed among the true sarcomata.

“This prolific connective-tissue formation can be explained by a disturbance in the circulation and in the distribution of the nutritive supply, brought about in part by the local irritation of the carcinomatous growth, and possibly quite largely by the electrical treatment.

(Signed) WILLIAM H. PORTER, M.D.”

CASE III. *Cystic angio-sarcoma of the left broad ligament; lipoma of the right; dilated tubes.*—Mrs. E. M., aged twenty-eight years, three children; only the last one now living, eighteen months old. Was examined at my office May 8, 1891, and gave the following history: Has always been well until the beginning of the year 1891, then began to lose strength and experienced more or less pain in region of both ovaries, especially the left. Has menstruated regularly about the middle of each month, and with no especial trouble until that of March, 1891, which came on (on the 17th) more freely than usual and with a good deal of pain. It continued profusely for three days and then began to check, but continued as a metrorrhagia for over two weeks. Again, on April 15th, it occurred, the flow being profuse, and the pain, especially of the left side, being severe. It had continued every day since that date. Patient anæmic, pulse weak, and heart's action somewhat irregular, with a harsh systolic murmur. Examination revealed an enlargement of the size of



a large orange at left of the uterus, somewhat movable, semi-elastic, and slightly tender to the touch. On the right side there was a smaller mass which was freely movable and perfectly hard to the touch ; uterus normal.

Diagnosis questionable. Probably hæmatoma of left tube or broad ligament, or both, due to some pathological growth which it was impossible to determine except by abdominal section. I advised the patient to enter the hospital and submit to laparotomy as soon as her condition would permit.

Laparotomy performed May 15th. Right ovary seemed to be healthy, but the Fallopian tube was considerably enlarged and dilated. In the folds of the broad ligament a hard nodule, apparently about an inch square, was found. Ovary, tube, and broad ligament tied off and removed.

On the left side a much more serious condition existed. During the operation it was impossible to distinguish the left ovary, it being covered in by the new formations in and around the broad ligament. The Fallopian tube was indistinctly made out ; but there were found *between the folds of the broad ligament* several cystic developments occupying a *central* position in the ligament, and below these cysts and further to the left, but still within the ligament, another mass which had every appearance of an hæmatoma. Some inflammatory exudate had been deposited around this mass and a little difficulty was experienced in removing it entire. It was, however, accomplished and the entire appendages of this side tied off and removed.

Operation, forty-five minutes. Cavity simply sponged out, there having been but slight bleeding, and closed by the deep silver-wire sutures only. (I would here say that during the past year I have returned to the silver wire, or the carbolized silk, deep sutures, and have had no mural abscesses such as I have had when the peritoneum has been first closed by catgut. I believe mural abscesses in my cases have been due principally to a faultily prepared catgut.) The patient made an uninterrupted recovery from the operation, and her general condition has been greatly improved. Still, although she has gained considerably in strength and flesh, she has not recuperated as rapidly as is usual after a simple laparotomy.

The examination of the specimens, also made by Dr. Porter, gave the following result, and, to my mind, their pathological condition accounts for their rapid development, and also for the bad condition of the patient when operated upon. It also, together with the two preceding cases reported, opens up a field for pathological investigation and research which may be of importance in the future, especially as to the question of development of malignant neoplasms *primarily* in the folds of the broad ligaments (the ovaries excepted), and also as to whether some cases of hæmatoma within the ligaments are not directly traceable to a preceding pathological development of a malignant type which, from its destructive tendency, causes the formation of the hæmatomas.

*“Report upon specimen removed from Case III.* The right ovary appeared to be quite normal in every respect. The Fallopian tube, however, of the right side was dilated and its internal wall thrown into leaf-like folds, running parallel to its long axis. Microscopic examination of the right tube showed no abnormality aside from the expansion of its lumen. The ciliated epithelium lining the tube was not only intact, but in a good state of preservation. This fact would tend to preclude the existence of a previous catarrhal disturbance of sufficient gravity to explain the dilated condition of the tube.

“In the folds of the broad ligament of the right side there was found a small oval neoplasm, flattened antero-posteriorly. This growth measured one inch in its longest diameter, one-half of an inch in breadth and three-eighths of an inch in thickness. Upon microscopic examination this neoplasm was found to be a simple lipoma with its well-defined capsule.

“On the left side very much more extensive lesions were found. The ovary was, however, perfectly normal. The Fallopian tube was practically in the same condition as that upon the right side; but owing to the extensive new formations between the layers of the broad ligament its lumen was not as uniformly expanded as was the case upon the opposite side. The integrity of the epithelium, however, appeared to be as perfect as that upon the right side. The same leaf-like longitudinal

folding of the mucous membrane lining the tube was distinctly made out in many places. Within the folds of the broad ligament there was found a large, reddish mass, two inches in its greatest, and one and a half inch in its smallest diameter. This neoplasm had a well-defined, distinct, and somewhat dense capsule, a firm, white, fibrillated, connective-tissue capsule. Within this capsule there was a well-marked and laminated mass of proteid substance resembling the appearances commonly seen within a sacculated aneurism.

"This tumor was attached, before being removed for examination, to the broad ligament and the new formations within the ligamentous folds by a small pedicle of fibrillated connective tissue. This pedunculated appearance was of artificial formation, the mass being completely between the folds of the broad ligament at the time of operation, and the neoplasm was unquestionably of hæmatomatous formation.

"Between the layers of this left broad ligament there was one quite large cyst, measuring one and a half inches in diameter. It had a thin wall of dense fibrillated connective tissue and contained a serous fluid resembling that commonly found in cystic growths developed in this region. Immediately surrounding this larger cyst there were several smaller cysts filled with a thick, dark-brown, and grumous material, which was almost gelatinous in its consistency.

"Microscopic examination of this material showed it to be composed of a granular, amorphous substance, and absolutely without cell-formation.

"The walls of these smaller cysts were less dense than that covering the large one, and were composed of a loose matrix of fibrillated connective tissue, newly formed bloodvessels and connective-tissue corpuscles of various kinds, the round and spindle-shaped cells preponderating. Between and around these cystic formations, underneath the Fallopian tube and between the layers of the broad ligament, there was an abundant development of newly formed connective-tissue substance.

"Microscopic examination of this new formation showed an abundant development of new and dilated vessels having the common appearance of angiomatous tissue. Some of the arteries

were surrounded by a sheath of newly formed fibrillated connective tissue infiltrated with a large number of connective-tissue corpuscles, so that many of the sections resembled the conditions that have been described as 'angioma hypertrophice' and 'angioma hyperplastice.'

"At some points there was an abundant formation of round and spindle-shaped cells, arranged in a homogeneous matrix, as is common with sarcomatous growths. At other points the connective-tissue corpuscles, and particularly the round cells, were pigmented as we find them in the melanotic formations of a sarcomatous nature.

"While all these formations *might* be the result of a local injury and consecutive inflammatory changes, it is hardly possible in the absence of any history of injury.

"It seems much more rational and in keeping with facts to look upon these neoplastic formations as sarcomatous in nature, and, through the rupture of newly formed and unduly thin-walled vessels, thus explain the hæmatomatous formations, rather than to attempt to develop an encapsulated hæmatoma and various cystic formations out of inflammatory changes without any clear and well-defined cause for the injury which could have excited the inflammation. This new-growth therefore should be looked upon as a sarcomatous neoplasm, or, better still, an angio-sarcoma.

"In this connection I might mention two other cases of similar character, which, in the light of what we now know regarding these formations, were unquestionably sarcomatous developments within the layers of the broad ligaments. One was an exceedingly painful, but distinctly encapsulated, hæmatoma of the broad ligament, which I examined for Dr. Bache McE. Emmet. It had a sharply defined capsule of connective tissue imbedded in well-defined sarcomatous tissue, all of which was located between the layers of the broad ligament. The other case was one which I saw through the courtesy of Dr. Thomas E. Satterthwaite, in 1878. Dr. Satterthwaite presented the specimen before the New York Pathological Society, with a complete history of the case. The following is a condensed quotation of the case as reported by Dr. Satterthwaite: 'The patient had died

from an internal hemorrhage, the point of rupture of the blood-vessel being upon the surface of a nodular body situated in the right broad ligament about an inch and a half from the fimbriated extremity of the right Fallopian tube. This neoplasm was the size of a pullet's egg, its central point being a small clot of blood, while around this central clot there were zones of clotted blood, also more or less organized, and soft friable material. It also contained a cyst about the size of a filbert, the contents of which were muco-purulent. The neoplasm did not involve the uterus, ovaries, or parovarium, but was quite apart from any of these three organs and seemed to be confined to the line of the Fallopian tube. Microscopically the friable substance about the cyst might be classed as a sarcoma; that is, it consisted of round and fusiform corpuscles imbedded in a homogeneous stroma. Unfortunately, however, such appearances belong also to blood clots that have commenced to organize, and therefore it is difficult, if not impossible, to distinguish between them. Sarcomas in such structures are rare, if indeed any such are on record. I should feel more inclined therefore to regard it as a cystic hæmatoma of the tube, a condition which is sometimes met with. The origin of the blood, however, in such a situation is difficult to comprehend.' I believe the above to have been a case of undoubted sarcoma.

(Signed)

“WILLIAM H. PORTER, M.D.”

CONCLUSIONS.—The first and third cases are, to a certain extent, analogous. At least in both cases the sarcomatous elements predominate, and although the development in Case I. was in the Fallopian tube *only*, nevertheless it was *within* the broad ligament of that side.

In Case III. the sarcomatous development was lying *centrally* between the folds of the left ligament. In Case I. there had been serious local injury inflicted by the injections (per vaginam) of ergotin directly into the walls of the tube. One of the results of these injections had been the frequent attacks of profound congestion. I believe also that this constant irritation from the injections had much to do with the patho-

logical condition of the growth itself. There was no breaking down of the tissues, no hæmatomatous condition in or around the neoplasm. Simply the rather soft, gelatinous sarcomatous growth rapidly developing, but practically still in its early stage. In Case III., with no history whatever of a previous local injury, there had been a rapid development of the neoplasm, then a breaking down of the tissue and the consequent hæmatomatous condition which formed so distinct, and, to my mind, a secondary part of the neoplasm. In both of these cases the Fallopian tubes were dilated to a considerable extent, but there was no trace of a preceding salpingitis. The increased size of the lumen of the tubes had been brought about by the *stretching* force upon its calibre as the neoplasms grew outward. In neither case had there been any pressure upon the tube.

Case II. is entirely different as to the pathological elements. The ovarium was entirely involved, as was apparent from its dilated tubular structure and the enlargement of the contained epithelial cells. This, however, seemed to be an adenoid hypertrophy, similar to that condition not infrequently seen in the uterine body, and was thought to be that *only* until, in the latest sections examined, and outside of the organ of Rosenmüller, certain small zones were found in which the lymphatic spaces were dilated and filled with epithelial cells, the epithelial corpuscles being packed into these elongated and irregular alveolar spaces without any definite order of arrangement. This positive type of pathological formation, together with the changes in the organ of Rosenmüller, at once stamped this portion as carcinomatous, the *whole* neoplasm being undoubtedly an adeno-carcinoma undergoing its transition to true carcinoma. This condition, *in the uterus*, has been recognized by Schröder as "adenoma malignum," by Winkel as "diffuse papillary adenoma," and more fully by Possi, Ruge, and J. Veit, the last of whom shows pretty conclusively the changes from an adenoma to a carcinoma in the uterine body. (A *résumé* of this subject under the title of

"Adenoma Uteri," together with the history of several new cases, by Henry C. Coe, M.D., published in the *American Journal of the Medical Sciences*, August, 1891, gives a pretty full report of whatever has been written upon this subject—adenoma of the uterus—up to the present date.)

It seems to me that Leopold's objection to Schröder's term—"malignant adenoma"—is well taken, and that with equal propriety the simple term "adenoma" could be dispensed with. Strictly speaking, this term adenoma should give place to that of *adenoid hypertrophy*, since it is very doubtful if there ever is a development and formation of new granular tissue in all its histological elements. That which we most frequently find is a simple hypertrophy of all the structures of the gland elements, with marked enlargement and retrograde changes in the epithelial cells, often giving them a decidedly colloid appearance. Up to this point there is little or no tendency to malignancy; and if the gland or hypertrophied tissue be completely removed at this time it is not apt to recur. If, however, at this point the irritation be continued, the basement membrane, upon which the epithelial cells rest, tends to give way and the epithelial corpuscles are then permitted to drop back into the lymph spaces. Here they meet with an abundance of nutritive material, and in their retrograde condition rapidly imbibe this material and properly utilize it. They rapidly swell, subdivide, and fill the lymph spaces with epithelial corpuscles, and give us the appearances characteristic of a true and malignant carcinoma.

This illustrates the danger of incomplete removal of this hypertrophic and degenerated tissue. If it is not completely removed, communication is established between the epithelial cells, in their degenerated condition, upon the outside of the basement membrane which supports them and the lymph spaces just underneath them. In this light the operative procedure, unless thoroughly done, may be the element that causes a growth, which is just on the border line, to become absolutely carcinomatous. In like manner all kinds of local

irritation, injections, or electrical influences may be the agent which causes the basement membrane supporting the epithelial cells to give way, and thus enable the epithelial corpuscles to gain access to the lymph spaces and a true carcinoma to be developed.

This appears to be clearly so in Case II., in which, for several months, galvanism had been given in powerful currents for the purpose of destroying or arresting what was supposed to be a fibroma of the uterus. As far as I know, this is the only recorded case of an adenoid hypertrophy in the *parovarium* undergoing degeneration and transition to a carcinoma. In fact, I know of no other recorded case of a *primary carcinomatous* development within the folds of the broad ligament, aside from those which develop in the ovary proper.

#### DISCUSSION.

DR. A. W. JOHNSTONE, of Cincinnati.—When we remember the nature of the little organ lying between the folds of the broad ligament, the wonder is we do not see here more of carcinoma, of adeno-sarcoma, and of other new-growths that have been reported. I believe they do occur oftener. These organs are the remnants of a fetal life. Their functional activity is in abeyance. They are like moles on the skin, with little or no nerve supply, and a slight vascular supply. They were cut off almost entirely from trophic supply years before. My own experience leads me to believe that their change into neoplasms is more common than has been recognized; yet I have only twice come across true cancer of the ovary. In those cases there was a well-defined tumor on one side as large as a water-pitcher. One was solid, the other cystic, but, strange to say, there was in both of these cases beginning carcinoma in both broad ligaments. Down in the hilum of the ovary was the beginning of the trouble, spreading toward the ovary, but not reaching the periphery in either case except in a few scattering nodules.

At the side of the growth was a thick, hard, scirrhus cancer, much better marked in the hilum of the ovary than at any other



point, and I have thought that these cases of cancer of the ovary are due especially to a degenerative change in the hilum, where the structure is deprived almost entirely of its nerve supply and nutrition. This portion of the ovary corresponds with moles and other excrescences on the skin, which are notorious for producing cancer. The deficiency of nutrition in the two instances is very similar. In many so-called cases of simple ovariectomy, I believe there is commencing cancer at the time of the operation, for it is not unusual in the course of six months or a year after the operation to hear of the abdomen filling up with cancer, carrying the patient off of this disease unexpectedly early after the operation. A more careful examination of the tumor removed might have revealed the commencing cancerous change.

This change from adenoma into carcinoma is an old story; it is the origin of many carcinomata.

DR. A. PALMER DUDLEY, of New York.—There is one point in Dr. Janvrin's paper which I think will bear a little investigation, inasmuch as the diagnosis in each case was uncertain to begin with, and was only made certain by the aid of the microscopist. The point to which I would especially direct attention was the fact that in one case, or in both, the patients were treated in the first place for fibroid growths. And all through the paper Dr. Janvrin led up to the idea that the starting-point of the adenoma or sarcoma was some injury.

The first laparotomy which I performed proved to be a case of cancer of the ovary, recurrence in the form of sarcoma taking place in four months in what appeared to be the healthy ovary on the opposite side, thus illustrating Dr. Johnstone's remarks. The patient finally died from extensive cancerous disease. I remember having seen years ago another case where a carcinomatous growth sprang up in the broad ligament in a patient treated by Dr. Wylie, and I saw him remove the growth. I have on one or two occasions seen malignant disease in the broad ligaments. In most of the cases known to me there had been a history of injury as the initial factor. In one of the author's cases the patient had been treated thoroughly by electricity. Now I believe that we can do injury with electricity just as we can do violence by any other means. During the past summer

I had the pleasure of spending a couple of weeks with Apostoli, and I saw just such a case in his practice, in which he dwelt for a long time upon the misuse of electricity in the treatment of fibroid growths. The case was one where malignant disease had sprung up beneath the broad ligament. The history showed maltreatment by electricity. I mean by that to say that the parts had been burned, and pathological changes had been induced which resulted in cancer. I think I have seen one case in New York in which the same result followed long-continued treatment by electricity. I believe that in cases of existing pelvic disease, it may be a pyosalpinx to start with. Excessive use of electricity or violence by injections of ergot may cause malignant tissue to spring up along the nerves and bloodvessels of the broad ligament. I certainly believe that Dr. Janvrin is right when he gives as the cause of primary cancerous growth in the broad ligament some form of violence.

DR. A. F. A. KING, of Washington.—Much has been said by Dr. Johnstone and other speakers to corroborate the idea which I have entertained for a long time with regard to the pathology of cancer, namely, that it is a disease which is the result of deficient nervous supply, and, consequently, of deficient government of nutrition by the nervous system. Now there is no question but that the process of nutrition is as much governed by nerve supply as are the processes of motion, sensation, etc., and it would appear that we have only to cut off or diminish this government by the nervous system in order to set up the process of cancer formation—a formation which has been spoken of very pertinently as a “histological mob,” as a growth of cells without order and without government. Dr. Johnstone probably had this idea in view when he spoke of cancer growing in moles and other tissues which have a deficient nerve supply. This agrees again with what has just been said regarding excessive doses of electricity. Such doses probably paralyze these governing nerves, or depress them, just as a severe stroke of lightning might destroy the entire nervous system.

Another illustration is seen in the frequent occurrence of uterine cancer after the change of life. Now, after the functions of the reproductive organs have ceased, it is natural to suppose

that the nervous supply would be cut off. Nature would not expend its powers in the maintenance of what we might call the telegraphic system of nerves going to the reproductive organs after they have finished their function. The telegraph-poles or nerves would be taken down. It would appear that after this involution of the nervous system common to the change of life, there is no longer any provision for the government of the pathological processes which take place in the uterus, its nerve and blood supply being greatly reduced. But if it so happen that the blood supply does not cease, growth of cells goes on; these cells have no nerve government. It is well for us to get some definite understanding, to have some good principle in explanation of the growth of this so-called malignant tissue. I think what has been said to-day tends to corroborate this view.

Now we know very well that during the exaggerated functional activity and nutritive growth of the reproductive organs which take place during pregnancy, not only do the vascular structures increase in size, the muscles hypertrophy, and so on, but also the nerves and their ganglia increase in size. After pregnancy is over, those structures undergo involution, as do the walls of the uterus. This shows that the organ requires during its period of activity more nerves, or larger nerves for its government. After the special function ceases, the telegraph-posts, as I have called them, are taken down. And so it seems to me that cancer really does arise in many instances from imperfect nervous government over histological growth of the tissues.

DR. JANVRIN.—I have very little to say in closing the discussion. The remarks made by Dr. Johnstone as to the embryonic condition of tissue in which malignant disease develops are certainly quite *apropos*. I think that that condition of tissue has very much to do with the development of these malignant growths primarily in this site. As I stated in my paper, reported cases are extremely few. I presume the cases do rarely occur, but I do not believe that they are so rare but that we would find more of them if a careful microscopical examination were always made of the tissues removed. In the class of cases referred to by Dr. Johnstone, I believe we would often find beginning malignant change—much oftener than we have here—

tofore. The specimens are not, as a rule, thoroughly examined microscopically. This is due to the fact that the gross appearances are those of perfectly simple and benign growths. One of the principal reasons why I wrote the paper was to call the attention of the Society to that fact, hoping that it might be of some use in stimulating them to the more thorough examination of specimens.

I am very glad to hear Dr. Dudley report the cases seen during the summer under Apostoli. From a considerable experience in this branch of gynecology during the past ten years, I firmly believe that nearly all cases of cancer of the uterus and of its adnexa are the result of injuries. Careful inquiry into the history of cases would, I think, corroborate this statement. I am not a believer in the theory of inherited tendency toward cancerous disease to any great extent. There may be a slight tendency toward that condition in some persons, but I believe that nine out of ten cases of cancer, whether in the pelvis or elsewhere, result from injury. In one of the cases reported in my paper, I believe that the injury was done by galvanism. It is true that this is the only case which I have seen due to this cause, but of this one case I am pretty confident. In another of the cases I am sure that the injury was brought about by injections made into the lumen of the tube. As Dr. King has stated, cancer has, as one of the prime factors of its development, a lack of nerve government. In the two factors mentioned, injury and lack of nerve control, we have sufficient cause for the disease without looking for a constitutional tendency. After it has once started, we know very well with what rapidity it advances, and how radically it must be dealt with by removing not only all the involved tissue, but also a good amount of surrounding healthy tissue, where this can be done, in order to give the patient the best chance for a long exemption from the disease, and in many cases an absolute cure.

## THE PRESENT AND IMPROVING STATUS OF CÆSAREAN SURGERY.

BY ROBERT P. HARRIS, A.M., M.D.,  
*Philadelphia.*

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LETTERS of inquiry, from time to time, received during the past year, appear to indicate that it may be profitable to present for discussion before this Society the two subjects, in their close connection, of *puerperal cœlio-hysterectomy* and *puerperal cœlio-hysterotomy*, as introduced respectively in 1876 and 1880, and improved step by step since, until they may be said to have been perfected. The Porro-Cæsarean exsection and the *new* Cæsarean section should not be regarded as rivals, for each has a special place in the field of obstetric surgery, and their respective rates of mortality in simple cases, under the general surgeon, are quite different. The object of each is to deliver a living fœtus and save the life of the mother; but they differ materially in ultimate result, the one being destructive of generative power while the other preserves it. As it is possible, by ligation of the Fallopian tubes or exsection of the ovaries, to render a woman sterile under the second operation, it has been proposed to call that form in which the uterus, tubes, and ovaries are permitted to remain in their integrity, the "conservative Cæsarean section," and this is the character of the *new* operation most frequently performed in Continental Europe.

In the *old* Cæsarean operation the uterine wound was for a long period left entirely to nature; and when it was at last treated by suturing, the stitches were too few to secure it

against leakage, the material used failed to hold the parts together, or a previous long labor made the additional security of no avail in saving life. Such was the fearful mortality of the *old* operation in Europe, especially in Great Britain, where the first 100 cases in chronological order presented a mortality of 85 per cent. in the women, that an opinion became prevalent even in our own country, and under prominent authority, that we had to contend with "the most dangerous operation in surgery." This judgment was openly given in 1878, at the first meeting that this Society held in Philadelphia, and probably some then present accepted it as correct; but a long and searching investigation has since shown, that the first 100 operations of the United States, arranged in the order of their performance, the last one in August, 1873, saved 43 women and 44 children; the first 50 of them saving 26 women and 26 children, or 52 per cent. When we consider the fact that 48 of the operations were reported by letters and were never published, the result appears the more remarkable; and it has thus been made the more reliable as a statistical exponent of facts. These 48 unreported operations saved 15 women; the same that Great Britain saved out of her first 100. In 11 women of the 100 American cases, the uterus was sutured, and 8 of them died, leaving 89 women in which the organ was left to nature; of whom 40 recovered, or nearly 45 per cent. I must confess that the final result of my tedious hunt for old cases, even back over a period of nearly half a century, somewhat startled me when the last calculation was made. Could we duplicate the result now, in our own country, under the same method? I am inclined to believe that we would not be able, with our present material, and in our large cities and towns.

It will be of interest to know that of the seventy Fellows who now compose the *active* list of this Society, there are twenty-one who have performed either the old, Porro, or improved Cæsarean operation. Of the last, under which the uterine wound is carefully sutured and the case treated asep-

tically, I find that these Fellows are credited with 26 operations, saving 16 women and 23 children, a mortality of the former of  $38\frac{1}{2}$  per cent. Only one Fellow has performed a *true* Porro-Cæsarean section, and this was fatal to the mother, through kidney disease. *Premature* puerperal cœlio-hysterectomy, where the fœtus is not viable, is not properly a Porro operation, and the 15 cases known to me, 11 of which were saved, belong to the second classification of Dr. Clement Godson, of London; 5 of these cases are American.

Although the record of recoveries under the improved Cæsarean operation is not very flattering to the Fellows as obstetrical surgeons, there is much encouragement in the fact that there has been a very decided increase in success during the last three years. The first 10 operations, beginning with the initial case of Dr. Garrigues, in October, 1882, cost the lives of 6 women and 3 children; and the last 10, commencing with that of Dr. Goodell, in March, 1887, proved fatal to but 1 woman, and all of the children were delivered alive. Out of a general American record of 56 operations, saving 29 women, 16 were saved under ten Fellows of this Society, who collectively have had 19 operations with 3 deaths. Our whole American record shows a list of 43 operators: of their first 10 operations, 7 were fatal, and 4 children were delivered dead; and of their last 10, 4 were fatal, with 3 children dead.

When we compare this record with the records of Leipzig, Dresden, and Vienna, in which the improvement over the past, and their recent successes have been so much greater, it will very naturally be asked, Why have American operators had so large a percentage of maternal deaths? This can only be answered by a careful examination and comparison of the cases that have recovered, and of their management before, during, and after their operations, so as to determine wherein the cases, or the surgery, or both, in the maternities of these three named cities, give their operators the advantage over our own to such a marked degree. Under the *old* Cæsarean

operation, where cases were safer in their own homes, and particularly in the farm-house or village cottage, than in a lying-in-hospital, America was, as I have shown, in the forefront of comparative success. But antiseptic surgery and improved methods have very materially changed the death-rate of the maternity, so that now the poor woman is in more danger of death, as a general rule, in her home of poverty, than in a well-ventilated hospital-room, under the same measure of skill. And, besides this, the maternity secures an earlier summons to the case, an elective operation where it is important, a careful asepsis, and a strict attention to the carrying out of orders, the want of which has often lost a patient.

New York City has had 26 Cæsarean operations since her initial case, and success, of 1838, with 16 deaths; 9, with 8 deaths, by the *old* method, and 17, with 8 deaths, under the *new*—a reduction of mortality from 88 $\frac{8}{9}$  per cent. to 47 per cent. Vienna has had as many as 20 cases in a single year; and Leipzig has had 38, in a little under eleven years. If New York had a well-appointed maternity to which all her subjects for Cæsarean delivery should be taken, it is safe to say that the mortality therein could not be reduced to the measure of Leipzig, of 3 deaths in 38 cases, with a foetal loss of 4; not because of any inferiority of skill, but for the reason that the subjects to be operated upon cannot be secured in as good season, and because, in a large proportion of the women, there are complications of disease still in action that render the prognoses in their cases doubtful if not decidedly unfavorable.

If we examine the records of the University Obstetrical Clinic of Leipzig, of the Frauenklinik of Dresden, the Santa Caterina Maternity of Milan, or the Lying-in Department of the Allgemeine Krankenhaus of Vienna, we shall find that the subjects of the Cæsarean section are chiefly those whose pelves are contracted either by rickets or malacosteon. Thus, in Santa Caterina, there were 18 cases of pelvic deformity



produced by rickets and 9 by malacosteon; against 2 cases of cancer of the cervix, 1 of fibro-sarcoma, and 1 of vaginal atresia, in a record of 31. In the 38 cases of Leipzig, pelvic contraction was almost universal; there was 1 case of retro-uterine fibroid. So also in the General Hospital of Vienna, rickets and malacosteon had deformed nearly all the pelves in 59 cases: there was 1 Robert's pelvis, 1 infantile, 1 kyphotic, 1 case of fibroma, 1 of osteo-sarcoma, and 1 of cancer of the cervix. Contrast these causes of disability with the multiple variety met with in this country, and we can understand why American cases have been so much more fatal than in the cities mentioned. Ask Dr. Garrigues by what complication he lost his first case; Dr. Lusk why his fourth case could not be saved; and Drs. Polk and Etheridge why they respectively failed in their cases of vulvar cancer and dermoid abscess, and we can, from their answers, learn to appreciate some of the drawbacks to success in the Cæsarean surgery of the United States. In our country we have no cases of malacosteon; and rickets, as a cause of disability is by no means præminent to the extent it is in Europe. Fibroid tumors, caries of the spine, lordosis, cancer of the cervix, coxalgia, exostoses, osteo-sarcomata, impaction of the fœtus in a transverse position, excessive size in the fœtus, and the descent of pediculated tumors, as of dermoids, etc., are among the disabling causes; besides which, there are many others that have only been met with once or twice each.

If a rhachitic dwarf is operated upon in good season, by the improved method, and has not been exhausted by futile efforts to deliver, she will in a large percentage of cases make a good recovery. Cancer cases will do well and the uterine wound heal readily, provided the disease is not too far advanced. Fibroid tumors complicate a case and often render the prognosis unfavorable. Coxalgic deformity of the pelvis is apt to be associated with the existence of spinal caries, psoas abscess, or incipient phthisis, and the prognosis must be unfavorable. It may be thought unjustifiable to perform a

Cæsarean section for the removal of a dead fœtus that has become impacted in the pelvis in a transverse position ; but the experience of our country under the *old* operation has shown that the risk is less than under the treatment by embryotomy and evisceration. As the subjects of this disability are generally such as have had no deforming bone disease, their powers of endurance favor their recovery after abdominal delivery. We have had 12 such operations in the United States, with 8 recoveries ; all by the *old* method but 2, in 1 of which only two uterine stitches were taken : the other was by the *new* method, with twelve sutures. As peritonitis is favored by exhaustion of vital force, it is best avoided by an early resort to the use of the knife. It is particularly important that no subject of cancer of the cervix should be allowed to fall into labor before the operation is commenced.

My personal experience naturally leads me to be hopeful in Cæsarean cases and to regard the operation as one *per se* of a moderate degree of risk where the operator is skilful, attends with due care to his asepsis, and the woman is in a favorable degree of health and strength. Having witnessed 7 Cæsarean operations under the *improved* method and 2 *true* Porro hysterectomies, and having in addition watched the issue in 2 other Cæsarean and 2 Porro-Cæsarean cases, in all 13, with 11 recoveries, the 2 deaths being inevitable, it is natural that I should have less dread of this form of delivery than is usual among my obstetrical associates. I have seen the same woman operated upon twice and recover, and have made an autopsy of another who survived her second operation nearly forty-eight years. This rhachitic woman was operated upon at the ages of twenty-six and twenty-eight years, and died at seventy-six ; the first child now lives, aged fifty-six, and the second died at forty-three. Of the two women that died, one was a Cæsarean case and the other a Porro-Cæsarean case. The first had been a week in labor, was pale from loss of blood, and had

her pelvis blocked by a retro-uterine fibroid, that had been mistaken by the accoucheur for an ectopic foetal head. The second woman was a dwarf, who had a contracted pelvis and albumin in her urine; she died of kidney disease. In but two of the fifteen cases enumerated was the foetus dead at the time of the operation, and one of these women recovered. Of the 13 cases seen by me, either in operation or convalescence, the prognosis was *very unfavorable* in 2, both of which proved fatal; it was *unfavorable* in 1 from length of labor, but recovery took place; it was *doubtful* in 2 and *favorable* in 8, all of the 10 being saved. Two of the last class were cases of cancer of the cervix, that had been under a preparing treatment and were not allowed to get into labor.

Cancer of the cervix uteri was under the *old* operation in England one of the causes of dystocia which most frequently led to a recovery after a Cæsarean delivery. Thus, of 12 cases, 4 recovered and 9 children were delivered alive. These better results were in large degree due to the fact that the operation was of necessity elective, and no other method was possible. In such cases under the improved operation the process of healing advances rapidly, as has been proved by autopsy. The uterine wound ought to be closely sutured in two rows, and as many as thirty stitches taken, to secure it against the possibility of leakage from within outward. Cancerous women should not be allowed to nurse, although they may be able to do so for a short time. Nursing has a tendency to shorten the life of the mother and to endanger the vigor of the foetus, which at best is often puny and delicate.

A wonderful change has taken place within a few years in regard to the danger of opening the abdominal cavity, and the thousands of tests that have been made under antiseptic or aseptic surgery, have removed in a large degree the dread that for a long period existed in regard to the production of peritonitis, as a consequence of admitting air into the perito-

neal cavity. Septic troubles are much better understood, defined, and guarded against, and pure, uncomplicated peritoneal inflammation can be treated with some degree of success. The old proverb that "prevention is better than cure" applies with some degree of force to the management of Cæsarean cases. Our whole object in arranging the steps of an operation should be to prevent the production of sequelæ that may result in death.

Through the revelations of ovariectomy, oöphorectomy, and exploratory coeliotomy, it was made evident that the dangers in the Cæsarean operation resulted mainly from the uterine incision, and to avoid the effect of this became the object of a series of test-changes, commencing with the introduction of uterine suturing and passing successively through cœlioclytrotomy (erroneously named "laparo-clytrotomy," the Greek term for belly being *koilia*, and that for the "parts between the short ribs and iliac bone," *lapara*, *i. e.*, the *flank*, in which the incision is not made), through utero-ovarian amputation and multiple two-row suturing of the uterus, with resection of the muscularis, dissection free, and welting-in of the peritoneum uteri, down to the present, generally accepted, simple method of closing the uterine wound, with deep and superficial *interrupted* sutures of silk or chromic acid catgut, one line penetrating the uterine wall down to the decidua, and the other intermediately taking up the peritoneum with some fibres of the muscularis.

In this multiple suturing in two rows the object is to prevent leakage and to secure as early a union as possible. To this end from twenty to thirty sutures are employed, according to the judgment of the operator or the special requirement of the case. In cancer cases, in those where the fœtus is dead, and in uterine atony, the larger number of sutures should be employed, but there is no necessity of making the tale fifty or more, as has been done in some European cases under an anxiety for success. Where the woman is in good health, has not been in labor, or has been but a very short

time and carries a living fœtus, the number may be *safely* reduced to twelve or fifteen, but the most experienced and successful Continental operators generally use as many as ten or twelve in each row, and sometimes many more superficial than deep. There is too much of a disposition in our own country to avoid the beaten track, by trying fewer sutures, or an uninterrupted form, or depending on a single row of deep interrupted ones. Our operators are in school yet, and will do well to study the plans adopted by such marvellously successful men as Zweifel, Sanger, Leopold, and others of the Continental maternities.

We come now to a special consideration of the two forms of Cæsarean delivery which are still in use. Fifteen years ago, when Prof. Porro inaugurated his operation at Pavia, its success to woman and child gave great hopes for its future results. Theoretically, the plan of excluding from the abdominal cavity the much-dreaded uterine wound and treating its amputated substitute as an external stump was an excellent one; but, practically, it was at the beginning in large degree a failure, as 29 mothers, or 58 per cent., died out of the first 50 operated upon. Of these 50 cases, 32 were given a favorable prognosis, notwithstanding which 15 of them died of the very conditions that had proved so fatal under the *old* method, viz.: of shock, 4; of septic peritonitis, 5; of septicæmia, 2; of peritonitis, 1; of secondary hemorrhage, 2; and of tetanus, 1. These results weakened the enthusiasm in favor of the method, and obstetric surgeons commenced to devise other plans, by which it was hoped that the uterine wound might be treated with better results *in situ*. This was particularly the case in Germany, where eight out of nine operations had proved fatal, the exception having been the eighth. Antiseptic surgery has accomplished wonderful results since these cases were recorded, and it is but fair to give Prof. Porro's method every advantage possible in estimating its general mortality. To do this I shall not take any one year which might present an unusually favorable or unfavorable

record, but the period of five years, to the close of 1889, the reports for which have been carefully collected. These five years give 158 operations, with 47 deaths, a mortality of 29 per cent., which fairly represents the *general* result of the operation in all countries. Special and local results may show a lower death-rate and a much greater progress in rendering the operation less dangerous; and we have reasons for looking to Vienna for such a change; but as yet we have only the full report of Milan, which is to June 8, 1891. The work of Milanese operators was at its beginning the most encouraging in any city in Europe, but the full record shows 8 operators, 31 operations, 22 women saved, and 29 children delivered alive, which is also a loss of 29 per cent. of the mothers.

The record of the Allgemeine Krankenhaus of Vienna, as far as received, shows the most remarkable diminution of mortality under the Porro operation of any institution in Europe. The Maternity of this hospital is now the great centre of the world in Cæsarean surgery, as shown by the fact that there were 20 Cæsarean deliveries therein under the two methods in the year 1888, with 2 deaths. From 1877 to 1885 there were 27 Porro operations in the Krankenhaus, with 14 women and 2 children lost, or nearly 52 per cent. of the mothers. With the year 1886 a great change began, and the next 25 Cæsarean and Porro-Cæsarean deliveries, down to January 1, 1889, cost the lives of but 2 women, and all of the children were living.

Germany, in the period before 1885, lost 19 women out of 29 and 11 of their children, a mortality of  $65\frac{1}{2}$  per cent. of the mothers and 38 per cent. of the children. In the years 1885-1889 there were 20 operations, with a loss of 2 women and 5 children. Germany has then reduced her Porro death-rate from  $65\frac{1}{2}$  to 10 per cent.

Italy has thus far led all countries in the number of her Porro-Cæsarean exsections, and has made the least satisfactory progress in reducing the percentage of death. Prior to the

year 1885 Italian operators lost 38 women out of 65 and 12 of their children, a mortality of 58 per cent. of the mothers. During the five years, 1885-1889, there were also 65 operations, with a loss of 24 women, a reduction to 36 per cent., with 8 children lost.

It is to be regretted that we cannot make a more creditable report for our own country, although there are evidences to show a progressive improvement in the results. Prior to 1885 there were only 4 *true* Porro operations in the United States, with but 1 woman and 1 child saved. Since January 1, 1885, there have been 14 more *true* cases, with a saving of 6 women and 7 children. We have only had 18 Porro operations in eleven years, and the mortality of 61 per cent. is greater than under the *old* Cæsarean method. Progress is, however, shown by the fact that 5 women and 5 children were saved out of the last 9 cases in order. Four of these last, with 1 death by puerperal mania, were in Philadelphia. Of the 8 cases in which the children were dead, 7 of the mothers died also; and of the 10 where the fœtuses lived, 6 mothers also lived.

This small number of American Porro operations is due to the preference shown by obstetrical surgeons here for the improved Cæsarean section, of which operation there have been 3 to each of the former, and this preference has been stimulated by the successes of Drs. Lusk, Goodell, and Kelly, who together have had 10 cases with 1 death—all of the children being delivered alive. Dr. Joseph Price, of Philadelphia, is the only Porro operator in America who has twice operated, and both of the women are now living; they were the subjects of uterine fibroids: one fœtus was already dead and the other is now a robust boy. By the exsection method their uterine malady disappeared in the delivery. He has also twice performed premature puerperal cœlio-hysterectomy, at five and four months, with the same result.

In view of the established fact that the Porro-Cæsarean operation has become, and is still becoming, much less fatal

than it was during its early years of trial, the question naturally arises, To what is this diminution of fatality due? This is the result of quite a number of cases, as follows :

1. To making the operation one of election, and not one of "last resort;" and, if possible, preparing and operating on the woman in hospital, as Dr. Porro did in his first case.
2. To performing the operation either before labor or very early in its progress. If the os uteri is sufficiently patulous for the exit of any cervical secretion, there is no occasion to wait for labor.
3. To a rigid antiseptic treatment of the cases.
4. To a cessation of experiments which in many cases proved fatal, such as dropping in the stump instead of clamping it externally, etc.
5. To the use of the elastic tubing of Es-march, or, what is preferred by many, that of strong manual compression, for the control of uterine hemorrhage, where the placenta may be in the line of the incision.
6. To evacuating the uterus without the abdomen, when it contains a dead fœtus, and especially when this is associated with septic fluid and gas.
7. To washing out the abdominal cavity by pouring in gently distilled water at a temperature of 105° to 110° Fah., in cases where blood is thought to have entered during the operation, or where the woman is threatened with a collapse and requires rapid stimulation.
8. To what is called "collaring the stump," which consists in sewing the cervical to the abdominal peritoneum, as for abdominal hysterectomy, by a long uninterrupted suture of silk or chromic acid catgut, so as to shut the peritoneal cavity against the possible entrance of air or septic fluid through the sulcus around the stump. This method of closure secures an early union of the two peritoneal surfaces held in contact.
9. To the antiseptic management of the stump exterior to the sewed line, by isolating it from the abdominal skin and muscularis by means of prepared packing, which separates it from the surrounding tissues without conveying infection.
10. To the employment of the glass tube for abdominal drainage where required, in



the place of the long rubber tube, for abdomino-vaginal drainage.

The greatest obstacle to the success of Cæsarean surgery—and this is markedly exhibited in our own country—is that the cases for operation are not brought to the observation of the obstetric surgeon until the risk of using the knife has been very largely increased by the effects of labor and attempts at delivery. The fact that in 8 out of the 18 true Porro cases the United States the fœtuses were already dead, and some of them in a state of commencing decomposition, before the use of the knife was finally resorted to, shows that the cases were in a more or less unfavorable state. If we look over the records of the most successful work in Europe, we shall find how intimate has been the connection between the living fœtus and the subsequently saved mother. This being the case, the saving of the woman must begin with the management under the obstetrician first consulted upon her condition. If he should happen to know the requirements for Cæsarean success the case will in all probability be so managed as to attain it. But if, on the contrary, he should prove to be one of the large number of half-trained obstetricians, that are the curse of poor parturient women in our large cities, the result may be decided adversely before he is fully aware of the necessities of the case. Our city accouchers who are in favor as consultants in cases of labor among the poor will bear testimony to the inconceivable ignorance of this class of practitioners. Perhaps the requirements of a medical education in Austria and Germany may be one of the reasons for the better results in Cæsarean surgery in their maternity hospitals, to which cases are directed by young obstetricians practising in the homes of the poor, that they may be properly delivered therein.

When it can be shown conclusively that a Cæsarean delivery should have a prospective mortality of 10 per cent., or less, provided the case is operated upon early, and under all of the requirements of a careful technique, there will be less

fear of the knife, and, consequently, less delay in making use of it. I believe that this rate of death is of possible attainment in many maternity hospitals.

The second part of my subject relates especially to the results and prospects of the *new* or *improved* Cæsarean operation, which, although introduced four years later than the Porro modification, has been more frequently performed, and with a greater degree of general success. The question of absolute, comparative risk can only be fairly determined by an extended test made in the same maternity, and under the same operators. Such a test has been in progress, although not designed for the purpose, in the Allgemeine Krankenhaus of Vienna, since the late Prof. Breisky introduced into it the German method of Leipzig, known as the "Kaiserschnitt nach Sanger," in 1887. From the first Cæsarean delivery of 1886, until the last of 1888, the two operations were in contrast, under eight operators, who made 11 Porro and 14 *new* Cæsarean sections, losing 2 women out of the first set, and not one out of the second, all the children being delivered alive. Prof. Gustav Braun appears to have had a somewhat singular individual experience. In his experimental days he lost 5 Porro cases out of 7; he then changed to the *new* method, and saved 5 women in order; he then resumed his Porro work, and saved 6 cases in order, under a more careful technique. The children of these 18 women were all living. When the Vienna record to the present time is given, the larger number of cases will make a more reliable comparison.

It seems almost incredible to us now that the surgeons of the world should for three centuries have performed the Cæsarean operation without ever once sewing up the uterine wound, when they knew by autopsy that the uterus discharged its fluid contents into the peritoneal cavity. When at last, in 1769, a French operator ventured to break the rule, and to put into the uterine wound "two or three" stitches for the purpose of closing it, he was severely con-

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demned for his rashness, although the woman recovered ; and no one was bold enough to repeat the experiment for a number of years. It was introduced into the United States by a charlatan in 1828, and no one again sewed up the uterus until 1852, when it was first done with success. Timidity appears to have long influenced the operators, so that they rarely sewed up the uterus, and when they did they put in an average of less than five sutures. In our own country there were 22 cases thus treated in fifty-two years (1828 to 1880), and 10 of the women recovered.

Although as many as ten uterine stitches are claimed to have been introduced in a case in this country as early as in 1874, and inserted in three rows, saving the woman, the world gained nothing by the venture, for the plan was not reported until the year 1885, when the new Cæsarean had been five years in operation. To Dr. Max Sänger, of Leipzig, who operated in August, 1880, in a case of retro-uterine fibroid, saving the woman, are we indebted for having used and advocated the two-row, multiple system of suturing, and for having reported the case and his method in December, 1881. He operated twenty-one months before the inauguration of the so-called Sänger resective method, under Leopold, now of Dresden. In this first case of Sänger, he inserted six deep and four superficial uterine sutures, the latter taking up some muscular fibres, and brought the peritoneal coat carefully edge to edge ; in fact, performing the new Cæsarean as we have it now, except that he used fewer sutures than he subsequently recommended. Although I do not advocate the use of Prof. Sänger's name as it is employed in Germany and Austria in connection with the new method of operating, I hold that he is entitled to the credit of having inaugurated the best of the forms of operation in use. In our own country in particular, there have been so many departures from the original plan of Sänger that it is neither creditable to him, or even truthful, to call them Sänger-Cæsarean operations. But in Germany, and particularly in Leipzig, where

he lives, and where the lowest rate of mortality has been reached, the name is a proper one because there is a much more rigid adherence to the method introduced by him, and used in his own case before the introduction of the resective plan, and cases after it was abandoned. As Prof. Säger has operated eight times without a death, he may be said to have perfected his own technique.

It has been claimed for the Porro operation that it is the more simple, and takes the less time of the two methods. This is certainly not the case, if all the requirements of hysterectomy and the treatment of the stump to secure success are rigidly complied with. The Porro operation of to-day in the hands of a successful hysterectomist, is quite an improvement upon that of the year 1880, in which 32 operations cost the lives of 21 women. The coelio-hysterotomy part of the operation can be done in a few minutes under either method; but the hysterectomy part of the Porro, and its completion, by which this method is becoming under certain operators robbed of its dangers, cannot with safety be done in a hurry.

The improved Cæsaean operation, on the contrary, may be rapidly, and still carefully and successfully performed throughout. Prof. Paul Zweifel, whose operations in Leipzig have been repeatedly timed, step by step, has completed an operation in which he inserted and tied twenty-six uterine sutures in twenty-five minutes; he inserted and tied nine deep stitches in four minutes, and seventeen superficial ones in six minutes, thus completing the treatment of the uterus in ten minutes.<sup>1</sup> Dr. Kelly completed his fourth operation in twenty-one and three-quarter minutes, but eleven less uterine sutures were employed. When we consider that Prof. Zweifel has been one of the most successful Cæsaean operators in the world, having lost his second, sixteenth, and twenty-second cases,

<sup>1</sup> He has introduced nine deep and eleven superficial sutures in a case in five and a half minutes.

out of a total of 23, with 2 children, we can see that rapid execution is perfectly compatible with good and careful work. At its beginning, the new Cæsarean operation repeatedly required from an hour to an hour and a quarter for its completion; but since its simplification the time has been much shortened in good hands. Some complex cases will take an hour yet, but in a case having simply a rhaehitic pelvis, where all the steps may be made to follow each other in quick succession, there is no reason for slow work, and from thirty to forty-five minutes should be time enough, even where as many as twenty uterine sutures are employed. An operator who wishes to economize time, should have every preparation completed before he takes up the knife, and should neither thread or unthread a needle while he is suturing either the uterus or abdomen; but these steps should be taken for him as he uses the needle-holder.

Through the kindness of Prof. Sanger, and later of Prof. Zweifel, I am enabled to present the record of the Leipzig Cæsarean operators from August 20, 1880, the date of the first operation of the former, down to August 1, 1891. This gives the following statement: Number of *new* Cæsarean operations, 38; women saved, 35; children alive on delivery, 35. Of these, the University Frauenklinik had 34 cases, with 3 women lost. Dr. Weber lost one woman in four days, from septic peritonitis. Prof. Zweifel had his first Cæsarean section at the Klinik (he had operated twice before) on May 1, 1887, and did not have a fatal result until his fourteenth case was under treatment. This woman had a contracted pelvis, eclampsia, and albuminuria, and died comatose from Bright's disease, in June, 1890. His twenty-first case at the Klinik also died. The woman had been passing her liquor amnii for twelve days, had meconium mixed therewith, and had symptoms of septic endometritis. She died in six days of septic peritonitis, and the uterine wound was found gaping. One would naturally expect that the Porro-Muller operation would have been selected for this case, because of

the very unhealthy condition of the uterus and the importance of removing it as a nidus of poison. There was probably some special reason for this failure to use the alternate operation so commonly resorted to in European maternities where the condition of the endometrium makes it unsafe not to exsect the uterus. Prof. Leopold, of Dresden, performed the Porro operation in the Frauenklinik, as a preference, 8 times in the five years 1885-1889, 3 cases having cancer, and saved all of the women and 5 children. There are no more successful Porro operators to-day than those who are noted for their good results in non-puerperal cœlio-hysterec-tomies and in the new Cæsarean section in large European maternity hospitals; and the most successful operators by the plan of Säger, in Italy, are mainly those who originally distinguished themselves by good results as Porro-Cæsareanists. Italy has been so strongly attached to what may be called her national method, that the new Cæsarean operation has with difficulty been introduced. But it has been tested, with a continuing improvement, during the last five years, and is specially popular and successful in Rome, where Dr. Bompiani has recently saved his fourth case in order. It has made much more rapid progress in reaching a low death-rate than was attained under the Porro method in its early days in Italy, as shown by the following comparison, viz.: First 25 Porro operations, lost 15 women and 5 children; first 25 *new*, or Säger-Cæsarean sections, lost 9 women and no children; or 60 and 36 per cent., respectively. In the last 13 on my record, there are but 2 deaths. We must look to our own laurels, as 14 women and 4 children were lost out of the first 25 cases in the United States, or 56 per cent. The *old* Cæsarean operation *saved* 14 out of the first 25 cases in our country, the last of the list being in 1847. There is a great deal more to contend with now in accomplishing such results in Cæsarean surgery than there was in our sparsely inhabited land of sixty years ago; but the operator of to-day should much more than make up the difference by his superior knowledge.

A question of importance to settle is, which of the two operations should be done in a given case; and another is, as to the propriety or safety of rendering a woman sterile by ligating her Fallopian tubes.

In examining the Cæsarean work of all countries, private and in hospital, we are forced to the conclusion that the *general* surgeon is more likely to attain success, in a favorable case, under a conservative Cæsarean than a Porro-Cæsarean section. As abdominal delivery is often required in emergency, and of an operator who has never seen or performed a cœlio-hysterectomy for disease, it is a more simple matter for him to open, evacuate, and sew up the uterus *in situ* than to carry out all the requirements that are demanded in a Porro exsection, in order that its measure of danger may be made equivalent to that of the former. If a Leopold, Zweifel, Säger, Gustav Braun, or Breisky may change from one method to the other without regard to any supposed difference of risk because of their thorough knowledge of and experience in abdominal surgery, it is not to be expected that a novice should be able to do the same and secure a like favorable result. If the Porro operation is as simple and free from risk as some experienced in abdominal surgery have claimed it to be, why is it that it takes so long, as a general rule, after it is introduced into a country before a low degree of mortality is attained as an average result? The method of Prof. Säger certainly has reached this point at an earlier period in Germany, Italy, and Vienna than the Porro method did; and the general average mortality of the former throughout the world is the lower of the two. Such being the relative dangers of the two methods, it is safer for the general surgeon to adopt the plan of Säger and his associates rather than that of Porro or its modification by Müller, provided the character of the case is such as not to make the latter a necessary choice.

If it is advisable to remove the uterus and ovaries because of the existence of malacosteon, uterine fibromata, a decomposing fœtus and secundines, or a sarcoma of the body of the

organ, it does not follow that the same should be done where the dystocia is due to a contracted pelvis simply. There is a partiality for the Porro operation on the part of some operators, because they hold that women who cannot be delivered of living children *per vias naturales* should not be left in a condition to procreate. Operators differ very widely on this point, and some strenuously oppose all expedients intended to sterilize the woman. I believe that Porro exsection and tubal ligation may be carried too far in the cases of married women, and I certainly have seen some who regarded with satisfaction their having again become mothers, through a second Cæsarean delivery or an early induced labor. In the cases of unsightly rhachitic dwarfs, such as are much more common in Europe than in America, it may be claimed that few of them have children born in wedlock, and that for this reason their continuance in procreative power should be brought to an end. In our own country, many rhachitic women who are only marked by shortness of stature, marry, and may become the subjects of the Cæsarean section. Should such women, in these days of a greatly diminished mortality under the Cæsarean operation, be permitted to run the risk a second time, or be subjected to some form of sterilizing process?

The removal of the ovaries, in concluding a Cæsarean section, has very rarely been done in this country. Its first trial was in 1863, upon a woman who had endured a Cæsarean delivery in 1861. Although but a few hours in labor, death resulted from peritonitis in ten days, she having been previously in rather delicate health. Theoretically, the removal of the ovaries is a better operation than ligating the Fallopian tubes, and, under aseptic precautions, should add but little to the risk. Oöphorectomy has the advantage that its effect is final, and no subsequent disturbances can arise from obstructed tubes, ovarian disease, or the continuance of menstruation. It has been claimed that women do not suffer from tubal ligation; but the method is still in its infancy, and obstructions that



result from atresia are not always innocent; time alone can tell the effect of the Murdoch-Cameron ligations. In the 15 cases in which I have been personally interested, the social question came up in but one, as all of the other women were married. In this case the Porro operation was selected, as it was thought to be less dangerous than the *old* operation, and the *new* one had then been tried but three times.

As a question of hospital economy the Porro operation is at a disadvantage, as it confines the woman a longer time than the *new* method. In a report of the Dresden Frauenklinik, Dr. Münchmeyer refers to this fact, and gives a Porro case six weeks for recovery. The stump may separate as early as the thirteenth day, but generally it does so in the third week. A patient of Dr. Kelly, after the new method, went home, a distance of two hundred miles, on the nineteenth day after her delivery.

In closing, I desire to call the attention of the Society to the fact that phlegmasia dolens has, in several instances in our country, followed the Cæsarean operation in the two forms here treated of. It was indirectly the cause of death in the first Porro case—that of the late Dr. Isaac E. Taylor. It affected the second patient, under the late Dr. Elliott Richardson, of Philadelphia. It occurred in two of Dr. Howard A. Kelly's patients, after the conservative Cæsarean section, and may have attacked the patients of other Fellows now present. Modern surgery credits this disease to sepsis, and it may be of interest to trace the connection between the wounded tissues and the crural vein. In some instances pyæmic abscesses are associated with the crural phlebitis and add to the danger of the inflammation.

I desire also to say that we have little to do in this connection with the contest that has so long been carried on between the Cæsareanists and craniotomists, in which the position of the latter must weaken as the mortality under the knife diminishes. The *new* Cæsarean operation, in the hands of a Zweifel, or a Leopold, in a case of extreme rhachitic deformity

of the pelvis, is less fatal than an embryotomy is in skilful hands, where there is the same degree of pelvic stenosis.

But what is to be done in the large number of cases where the pelvis is just too small for the fœtus to be delivered alive by the forceps or version, and where delivery can be readily accomplished after perforating and emptying the head, with, as Leopold has calculated, a loss of 2 per cent. of the cases? Aside from the moral question, there comes up that of the relative degrees of risk under the two methods of delivery. Should the woman be willing to run the additional amount of risk for the sake of saving the child? If the general average mortality can be reduced to 10 per cent., the risk in operations upon rachitic women in fair health, and performed early, may be reduced to 8 and possibly to 5 per cent. There is a disposition in our profession to condemn the Cæsarean section in cases where the true conjugate diameter is greater than  $2\frac{3}{4}$  inches; but in that event the alternative is fœtal destruction, to which many are now violently opposed, regarding it in the light of an unjustifiable homicide. Are we ready to do this, and to repeat the operation, where the woman declines to have an early labor induced? I hope not.

#### DISCUSSION.

DR. H. J. GARRIGUES, of New York.—I noticed that the author, through almost the whole paper, spoke of two operations, one called Porro's operation, and the other called alternately the new or the improved Cæsarean section. To some of the members this may seem very immaterial, but it is really of considerable interest. Porro invented something new. On a certain date he performed Cæsarean section in another way from that in which anybody had done it before him, by removing the uterus and the ovaries; and that operation has proved valuable, has been repeated many times by other operators, and has found special indications. It is an operation of predilection in certain cases. It is entirely different, however, with the so-called new or improved operation. The expression "improved operation" was first used, as far as I

know, by myself in describing my first case in 1883; but usually this operation goes under the name "Sänger operation," which, in my opinion, is unjust. Sänger wrote a book of two hundred pages, in which he collected the gist of what was known about Cæsarean section. Beside that it contained one new suggestion, which was to cut out a piece of the muscular tissue just as you might cut a slice out of a melon. This has been tried once or twice, and was soon given up, because it was found entirely superfluous, and it would probably leave the womb in an unnecessarily weak condition in case pregnancy should take place again. The best proof that this operation ought not to be called the Sänger operation is, in my mind, the mere fact that in Sänger's own list of operations he is the eighth operator. I am the third, and my operation followed so soon the first two German operators that I was entirely ignorant of their work. In performing my operation it turned out to be a "Sänger operation," so called; I only applied what we knew about abdominal surgery, especially the treatment of fibroids of the uterus. I had never read one line of what Sänger had written; in fact, he had written but little. His book had not yet arrived in America. I had to write to Germany to get it. Every single step in the so-called Sänger operation had been done by somebody else.

It would lead us too far to go into details, but nine or ten distinctive details in the new operation had all been practised by somebody else, either in some other operation, as, for instance, in extirpation of a fibroid from the uterine wall, or even in Cæsarean section. The double suture, upon which so much stress has been laid, was used by Kehrer and described in print before Sänger's book appeared. Although we must admit that the double suture was an improvement, and I used it in my first case without knowing of Kehrer's and Sänger's cases, yet the point was the actual use of sutures, and that had been done frequently, especially here in America. Dr. Lungren, of Toledo, Ohio, even folded in the peritoneum so as to keep peritoneal surfaces in contact. He not only did this, but described it in print several years before Sänger, so that everybody could read how he did it. I am, therefore, thankful to Dr. Harris that he throughout his paper speaks of a new or improved operation, which is the proper term,

since very many men, independently of one another, have furnished the component parts of this improved operation.

The question has been asked why we are not so successful with Cæsarean section in this country as in Europe. I believe that several points must be considered in this connection. One is the way in which our hospital service is distributed. We have here the English system of dividing a service between three or four gentlemen, and in most hospitals there is even a law that no operation may be performed without a consultation with the other surgeons and the consent of the majority. In all of the hospitals on the European continent it is entirely different. There it is always one man who is in power, and he is there all the year round. Not only that, but he has one assistant for years. This assistant is always there, and he is often a prominent man himself. It is entirely different here. I speak of the Maternity Hospital to which I myself belong. We are four there, and what assistants have we? Young men who come in for six weeks; every six weeks we change. Then there may be in some of the maternity hospitals a connection with a general hospital. We, for instance, have nurses who at the same time belong to the Charity Hospital, which, of course, is a considerable source of danger when we have severe obstetric operations to perform.

Another point is that aseptic midwifery is not so generally adopted here among general practitioners as it is in Germany, or, I suppose, in other European countries. There everybody, without exception, will treat even the simplest case on the antiseptic principle. Midwives and doctors practise strict asepsis. That is not the case here at all. I meet a great many general practitioners who speak about antiseptic midwifery as if it were entirely superfluous outside of hospitals. The consequence is that cases coming from private practice are very liable to be infected before they reach the men who have to perform Cæsarean section.

I will add only a few words about the question of sterilization. I think the reason why we do not operate with that object in view is that it increases the danger. I cannot admit that it would be a small additional danger to take out the ovaries. We all know that it causes considerable shock, and that it causes

much pain. For almost a whole week after we have removed the ovaries the patient has considerable pain, probably due to constriction of nerves in the stump. At any rate we have to contend with this factor, which is almost entirely excluded if we simply perform Cæsarean section. I do not suppose the same objection would apply to tying the tubes, but other questions would come up there; perhaps it might lead to hæmatocele starting from the ovaries.

As to the question, Are we justified in destroying the life of the living child? I would say that in my opinion we are. In spite of all the progress which Cæsarean section has made, it has still a much greater mortality than has craniotomy. We cannot go by the old statistics. Take the new statistics, and there we have the very remarkable result from Leopold's clinic that his craniotomies, ninety-two in number, were performed without a single death; that is to say, there was no loss of human life on the mother's side. On the other hand, even in his own exceptionally skilful and practised hands, he had a mortality of 8 per cent. in his Cæsarean sections. On the other hand, therefore, we see how much better off the woman is if we do craniotomy with proper antiseptic precautions than if we perform Cæsarean section. We sacrifice the child; but then we know that almost all those cases occur among the poorest classes; that a large number of these children die within one year; that scarcely one-half live five years, and that life for many of the survivors is misery. Taking all these facts into consideration, I do not hesitate to perform craniotomy, even on the living child, when it is necessary in order to save the mother.

DR. HENRY D. FRY, of Washington.—I suppose I have been called upon to speak, Mr. President, because of a case in which I recently performed Cæsarean section. I have no remarks to make on the subject in general. The case was simply one in which I performed the improved Cæsarean operation. My belief is that the success which followed was due to undertaking the operation early. It had been fatal in a few other cases in this city, and the only difference between them and my own was that in the latter the woman had been in labor only three or four

hours. Her condition was good, and I think the favorable result was dependent on that alone.

DR. A. P. DUDLEY, of New York.—It seems to me, Mr. President, that the points in this paper which should be brought out in bold relief, if possible, relate to improvements. The paper is on the improving status of Cæsarean section. In all the articles written by Dr. Harris lately, and in many by other gentlemen, a comparison has been made between Porro's operation and Cæsarean section. It is evident to all that a comparison of the two is favorable to improved Cæsarean section. Although Porro's operation has improved with frequency of performance, it still to-day does not stand on a level with the Cæsarean operation.

Now the question comes up, Can we improve the present method of Cæsarean work, making the new Säger operation one which will take the place of craniotomy? I believe we can. I think the points which ought to be brought out are the necessity for reaching our patients earlier, and to improve the method, if we possibly can. Comparisons between this country and European countries are not favorable to us, for the reason that abroad they receive their patients into the hospital two or three weeks before labor. They can watch them every day, and can do the operation when they get ready. In this country we have to do the best we can by catching patients at clinics, at their houses or apartments.

The technique of the operation is well understood, but I believe we can and will improve upon that. Certainly, the improvement will be in the direction of treatment of the peritoneal cavity after removal of the child, the removal of the child in such a way as to avoid the entrance of poison into the abdominal cavity, and surgical treatment of the wound in such a way as to enable it to heal with the utmost possible rapidity. I have had one case in which I thought there was a little improvement even upon the Säger method. Having the patient in the hospital, I allowed labor to begin, then performed the operation as rapidly as possible. I sewed the wound in the uterus with catgut suture, doing it entirely without the abdominal cavity. A continuous suture of fine catgut was employed, three rows instead of two.

This patient did not have a rise of temperature. I believe it is entirely unnecessary to use even silk, or interrupted suture, in sewing up the uterus, for we know that silk, even when properly prepared, will sometimes leave a sinus. It must be buried before it becomes absorbed, and therein is danger.

I think we can improve upon the present method, and I should like to hear further discussion upon the subject, in order that we may learn how to save a larger percentage of the lives of the mothers and children than we do.

DR. H. C. COE, of New York.—The point which has been made in the discussion to-day—the early performance of the operation—is the principle which has been adopted at the Maternity Hospital during the past three years, and it has resulted most favorably, each of the four obstetric surgeons having had a successful case, all the mothers and children having been saved. We are, as is well known, advocates of the elective operation. The rule is to have every patient thoroughly examined as soon as she enters the hospital, and whenever there is a case in which there is marked pelvic deformity, indicating the possibility that Cæsarean section may be called for, the patient is kept under careful observation, so that if it become necessary to perform the operation every preparation can be made beforehand. In spite of the fact that the surroundings were most unsatisfactory (or have been until quite recently) and the house staff untrained in abdominal surgery, the operations have been uniformly successful. In this, as in every other important obstetrical operation, we cannot expect our statistics to equal those of foreign surgeons unless we exercise the same care in the selection of cases and in the details of the operation.

DR. R. A. MURRAY, of New York.—I have always been a strong advocate of Cæsarean section from the elective standpoint, and I think we shall come to have as good statistics from this operation as from ovariectomy. It is not so very many years since a series of twenty ovariectomies done successfully was quite startling. To-day we have men seated here who have done twice that number without losing a patient. Except for the contracted pelvis, are the conditions worse in Cæsarean section than in ovariectomy? I do not mean the simplest cases of ovari-

otomy, but ordinary cases. In Cæsarean section you have not adhesions of the tumor which you are going to incise; you have no difficulty from hemorrhage; sepsis can be as certainly avoided. Why is it that there is a worse result? It must be something aside from the operation which accounts for it. The reasons are these: The patient has not been examined before labor set in; she is allowed to become exhausted by attempts at other methods of delivery before the abdomen is opened; the patient in this way has become septic. But in hospital practice, as Dr. Coe has stated, where we have known the conditions beforehand and are prepared to meet them, every case has been saved. Each of the members of the Maternity staff has operated, so that it is not a question of skill in one man. Each of us had to contend against the disadvantage of assistants who had not been trained in abdominal surgery. Yet the result was uniformly successful.

But the operation must be contrasted with craniotomy, the only other resort in these cases. Formerly, Cæsarean section was resorted to only where craniotomy was out of the question. But now, where it becomes a question of saving the child, I hold that the preference should be given Cæsarean section, for if the case is taken in time, we will find our statistics will become more favorable for the mother, even more favorable than in craniotomy. I have nothing to complain of craniotomy; I have not lost a patient, although I have had a number of cases. Yet I know operators who still maintain that Cæsarean section should not be done except for absolute indications. In one instance, the operator spent three hours in relieving the patient of the child. She lived, but she had a torn vagina, a lacerated cervix, and infection afterward which left her worse off than if she had been dead. I think that we must take the after-condition of the patient into consideration.

Where it becomes a question of whether to do laparotomy or craniotomy, I think that even the average practitioner—certainly the average laparotomist—will get about as good results from Cæsarean section for the mother, and the child is saved. The difference in mortality even abroad can be accounted for by the fact that Cæsarean section is resorted to in the majority



of cases only when there is an absolute indication. The statistics of the past five or eight years are hardly to be considered, except in so far as they give us information on the technique of the operation.

DR. PARISH, of Philadelphia.—The paper when read carefully will show, I think, that Dr. Harris is in favor of the elective operation. In fact, I know from a conversation with him that he is. He is not at all in favor of craniotomy in elective cases, but he is in favor of consulting the parents in cases of deformity of the pelvis in which craniotomy would not bring to the mother very great risk, and if so authorized by them would himself prefer the Cæsarean section.

As to the high mortality in this country, very much could be said. There is but one point which I shall throw out, and that, of course, is not new; it is the failure on the part of practitioners in this country to recognize the indications for Cæsarean section until it is so late that the operation becomes a hopeless one. It is not altogether the fault of the individual operator or practitioner, but rather the fault of our system of education. There is not a school in our country in which adequate instruction in obstetrics is given. In some of them the system of education is much better than in others, but in most of them there is no teaching which enables the practitioner to determine in many instances the necessity for this operation. For instance, many graduates never saw a pelvis measured. Many doctors do not examine their patients until labor comes on, when it is too late to put the woman in proper condition for an operation. Then, where the labor is found to be a difficult one, the physician is apt to try almost every procedure before he undertakes Cæsarean section. These remarks are applicable not only to country practitioners, but also to those in cities. I have had some personal observation with regard to the general inability of city physicians to determine in some cases the necessity for Cæsarean section.

Now, with regard to a choice between the Porro and Cæsarean operations, I am glad to learn that there is no one in this Society who does not recognize the new Cæsarean as involving less risk; at any rate no one has so expressed himself. As to craniotomy

or section, either the Porro or the new, I am one who believes that we can render the mortality from Cæsarean section lower than it is now. And it is our duty to endeavor to do it by every means possible. I am not one who believes that we do justice to our obligations when we perform craniotomy because we do not feel competent to do Cæsarean section. Yet I am sure that this is one of the reasons why craniotomy has been done so frequently in this country—the operator has not felt himself capable of doing a Cæsarean section. It is our duty to prepare ourselves for the performance of the operation.

Again, there is a widespread tendency among many practitioners in America to do almost everything before doing Cæsarean section. I have seen that in several instances. One is called to perform Cæsarean section on patients who are almost moribund. They die, perhaps, in less than an hour after the section, because death had been caused by unwarranted procedures undertaken before the resort to section. In two instances I was called for rupture of the uterus where the pelvis was deformed. The forceps having been already used unsuccessfully and version undertaken, the uterus finally ruptured. The women were moribund and died very shortly. The cases show that even in large cities, where opportunities for study and for observation are so great, physicians are not able to recognize the necessity for Cæsarean section in given cases. For this condition of affairs our medical schools have been, and still are, responsible.

DR. EGBERT H. GRANDIN, of New York, being prevented from attending, sent the following communication: The improving status of Cæsarean surgery, as clearly set forth in the very exhaustive paper which our distinguished colleague has read, fortifies me in the position which for some time I have held—that the time is ripe for the deliberate *election*, in hospital practice at any rate, of the Cæsarean section over embryotomy. On the last occasion when I argued in this direction I was in a decided minority, being opposed, amongst others, by a leader amongst the professors of obstetrics in this country, as also by a gentleman who is widely known as a most distinguished obstetrical writer and practitioner. It may be that the ultimate outcome of the discussion to-day will be the same. True to my positive convictions,

however, I shall again treat this question from the standpoint of one who not only pleads for the *elective Cæsarean section*, but also for the *deliberate election* of each and every obstetric operative procedure whenever and wheresoever election is possible.

On this occasion, as on others, I shall neglect the moral or "theological" side of this question. The decision we reach, I contend, should be based on scientific grounds purely. Once let it be proven that we can save the child through the elective section and yet not imperil the woman to a greater degree than does embryotomy, and there ceases to be an excuse for mutilation of the living fœtus. Let the reverse be proven, and neither dogma of church nor choice of laity is going to dissuade the physician from his foremost duty, which is to the woman.

Further still, in the course of my argument, I will not allow myself to be ruled overmuch by statistical data. This question of Cæsarean section *vs.* embryotomy can alone be decided from a statistical basis when we shall be in possession of the data derivable from a series of strictly *elective* Cæsarean sections. At a glance, it is apparent that all cases should be ruled out of our tables where the section was forced on the operator because, forceps and version having failed, the choice necessarily lay between embryotomy and the Cæsarean section. A major operation on an exhausted patient ought to increase the average mortality rate.

Again, from a statistical standpoint, we hear of the results from all the Cæsarean sections. Do we hear the results from all the embryotomies? There may be gentlemen whose mortality rate after the former operation is 0 per cent., and after the latter 100 per cent. The successful operation is reported; the unsuccessful one is not. We cannot fairly judge this question as yet from the standpoint of statistics. The problem which we, as physicians, must face is this: *deliberate election of embryotomy, or deliberate election of the Cæsarean section.* How can we face this problem?

The physician in attendance on a case of pleurisy is on the alert to interfere in the event of empyema supervening; the ophthalmologist awaits the ripening of the cataract; the surgeon stands guard over the injured limb to act on the appearance of

the line of demarcation between gangrenous and sound tissue; the obstetrician similarly should watch and should know the pelvis in order to assist the woman and the fœtus at the right time and in the right manner. The hap-hazard obstetrics, which has largely predominated in the past, should yield to scientific obstetrics. The student must be taught how to examine the pelvis, externally and internally, and he must be taught that he fails in his duty if he neglects this examination. The laity must be educated to the fact that the interests of the gravida are best subserved when, from the earliest stage of pregnancy, her physician has thoroughly studied the configuration of her pelvis, and when, at later dates, he has estimated as accurately as he may the size of the fœtus which must pass through this pelvis. *In a doubtful case the interior of the pelvis must be explored under anæsthesia.* Such in outline are the prerequisites of scientific obstetrics. Thus, in general, will we be able to *elect* in turn, artificial abortion, premature labor, forceps, version, the Cæsarean section, eventually relegating embryotomy to its proper sphere—instances where the fœtus is dead or where the physical condition of the woman or the living unborn fœtus is such that Cæsarean surgery will seriously imperil the former and avail naught to the latter.

The *elective* Cæsarean section subjects the woman to these risks: 1st, shock; 2d, hemorrhage; 3d, sepsis. To-day we may fairly claim that both hemorrhage and sepsis are avoidable. The operation being *elective*—that is to say, the operator selecting deliberately the time for its performance—such measures may be taken as suggest themselves for placing the patient in the best possible condition for withstanding the factor shock. In short, we can eliminate this factor just so far as we are able to do before resorting to any major operation. As yet it is granted, however, that the prime risk the woman faces is shock.

Now let us look at the alternative operation—embryotomy. If the time ever comes when the physician—except in extreme degrees of dystocia—will deliberately *elect* embryotomy, then his patient will still run the risk of sepsis and of hemorrhage, but to a less degree that of shock. The day, however, will never dawn when this operation will be deliberately elected, for the simple

reason that every physician instinctively shrinks from his first embryotomy, and all the more from his second. He shrinks because he feels that he is *taking life*. Therefore the physician of to-day and the physician of the future—if he cannot *elect* the Cæsarean section—is going to attempt delivery by forceps, by version, and when these measures prove fruitless and the patient is exhausted and the fœtus to all intents and purposes is dead, then and only then is he going to do embryotomy. The factor shock is then more to be dreaded than if the Cæsarean section had been elected from the start.

As for the difficulties of the two operations, my personal experience leads me to state deliberately that the section is far the simpler. The embryotomies I have been called upon to perform have been the most difficult of any operations I have ever performed. The reverse of this holds for the Cæsarean section in my experience. This latter operation I rank with ease of performance next to the low forceps. I do not even except version in contracted pelves, for, whilst the mere act of turning the child, under favorable conditions, is easy, the next step—extraction—is usually difficult and may be very difficult.

To state now the experience on which I base my argument: I have assisted directly at two Cæsarean sections and have performed two myself. None of the four offered special difficulties. Three of the women recovered, and all of the children were saved. The fourth woman died, on the fourteenth day, of acute inanition consecutive to puerperal mania. The autopsy proved the absence of sepsis and the thoroughness of the operative technique. This patient likely enough would have died had an alternative operation been performed. The section was not elective, the melancholia which preceded the mania having existed prior to operation.

The exact number of embryotomies at which I have assisted, or which I have performed, I cannot state numerically. I have vivid recollection of three cases, however; one patient (operated upon by a colleague) died of shock, forceps and version having preceded the embryotomy, and two personal cases, in one of which the patient nearly died from profuse hemorrhage and shock combined, and the other was in deep shock for hours.

From such personal experience and in face of the constantly improving status of the Cæsarean section, I plead again for the deliberate election of this operation in hospital practice whenever the pelvis is too small for the fœtus, or (*for the reverse holds*) the fœtus is too large for the pelvis.

As regards the Porro operation, I wish simply to state that, at present, I would only prefer it to median uterine section and suture when a uterine tumor existed as a complication; when the uterus had ruptured in such a direction or manner as to render the uterine suture useless; when the uterus was septic. In the highest grades of pelvic deformity, to place the patient beyond the possibility of further conception, I would add removal of the ovaries and tubes to the modern section. To perform a Porro, where the median uterine section is possible, I hold enhances shock.

## UNIQUE CASE OF MULTIPLE NEURO-LIPOMATA FOLLOWING LAPAROTOMY.

BY H. MARION SIMS, M.D.,  
*New York.*

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THE object of this brief paper is to bring before the members of the American Gynecological Society the clinical history of a most interesting and unique case of what I have termed "multiple neuro-lipomata of the abdominal wall," for want of a better name. The case is one I have watched closely for more than six years past, and greater suffering and more fortitude in a patient I have never witnessed before or since.

In 1884, the patient in question, a big, strapping, strong girl of eighteen years of age, was married. She had never known a day's illness in her life. She went off on her wedding tour, and returned in ten days to her home in New York a complete physical and moral wreck. The cause of this great change in so healthy a specimen of woman was due to vaginismus, and it was then that I first saw the case. I found her nervous, hysterical, and with all the reflex symptoms this most distressing complaint will produce. Of course, I at once advised excision of the hymen as the best remedy to pursue. Ether was administered, the hymen removed, and the patient wore the Sims vaginismus plug off and on for two weeks. Her nervous symptoms all disappeared and she was discharged as cured.

I heard no more of the case for six or seven months, when I was one day hurriedly summoned to her residence, and found her in bed in a most violent convulsion, epileptic almost in character, with all her family about trying to hold her in the bed.

They then informed me that the patient was six and a half months' pregnant, that these attacks had first begun a week previous, each day becoming more and more violent. The spasms varied in duration from five to twenty minutes, the patient complaining of violent pain over the region of the left ovary. During the attacks she would scream and tear her hair out in an alarming manner. I placed her on a table and made a careful examination. I found her to be nearly seven months' pregnant, and on the left side, jammed tightly against the abdominal wall, between it and the uterus, was an enlarged cystic ovary, about the size of a pigeon's egg. Pressure against this cystic ovary caused her to scream out in an agony of pain, and at once relapse into one of the convulsive attacks.

To my mind the cause of these hystero-epileptic attacks was entirely due to the pressure of the womb on this enlarged and misplaced ovary, and I so explained it to her family and friends, promising she would find relief no doubt as soon as the period of gestation was over. No kind of medicine had any noticeable effect on the attacks, and even morphine in large doses, administered hypodermically, seemed to have no power to stop or even lessen the severity of the spasms. I found the greatest relief produced by the inhalation of the nitrite of amyl, and kept the patient's nurse supplied with five-minim globules of the nitrite of amyl, with instructions to use one at the first symptom of a return of the convulsions. By this means the intervening time up to labor was passed in comparative comfort by the patient, though she was necessarily confined to her room most of the time.

The child, a not very healthy specimen, was born in January, 1885, labor being normal in all respects, and no convulsion occurring during its progress. I thought she would be free from her hystero-epileptic attacks when the pressure was removed from the ovary, and I was not a little disappointed and chagrined, when her family physician sent for me one evening about a week after confinement, to find her in a convulsion, if anything, worse than any I had previously seen her in. I made another examination, found the left ovary more enlarged than before, and this time lying directly behind the uterus, the weight



of that organ resting upon it. The right ovary had also become enlarged and cystic; whether this ovary was so affected at the previous examination I am not prepared to say, as at that time and under the then existing conditions it was wholly impossible to feel it. For some weeks I treated this condition by elevating the uterus, using tampons, etc., but all to no purpose, the patient's condition and distressing symptoms remaining as bad as previously. The convulsions were beginning to tell on her constitution, and I could see no other way to relieve her condition than by a laparotomy. Dr. C. C. Lee, of New York City, saw the case in consultation and fully agreed with my views in regard to the proposed operation.

I performed the operation at her house a few days after the consultation, and removed two very much diseased ovaries and tubes. Both ovaries were much enlarged and cystic; the left, as I have said, being larger than a pigeon's egg, and the right one not quite so large, nor as cystic. The patient had a hysteroleptic attack two hours before the operation, but she has never from that day to this exhibited the slightest sign of a return of the convulsions, which for so long a time shattered her health. She made a very good recovery from the operation, the wound healing throughout by first intention.

Now comes the most curious part of the history of this long-suffering patient. I had again discharged her as cured, and imagined I would never see her as a patient again. In build she was inclined to be decidedly fleshy, and the adipose tissue of the abdomen was probably all of two inches in thickness.

In July or August, 1885, I was sent for again very hurriedly, and found my patient in bed, crying as if her heart would break, and complaining of a severe pain in the abdominal wall, about an inch below and to the right of the umbilicus. The pain was "a sharp, drawing" pain, according to her explanation, covering an area no larger than a five-cent nickel-piece. The lightest touch with the tip of the finger caused her whole body to shrink away from the touch, the pain being most acute. By patience and perseverance, however, I managed to feel just under the skin

a little hard, round growth, which felt to the finger just as a large duck-shot would feel if it were imbedded just below the surface of the skin. I was puzzled to know just what to think of this new condition of affairs. I persuaded the patient to let me freeze the spot with a piece of ice dipped in salt, make an incision, and find out just what the little lump was. She readily agreed, and I made an incision just an inch long through the skin; then, running my finger into the wound, I could easily catch hold of and enucleate the little tumor from the surrounding fat. In pulling it out I could feel something give, then stretch, and break, just as a thread would if put upon a stretch. After removing this little growth the finger could be forcibly pushed into every corner of the wound without causing the slightest pain of any sort. The wound was washed out with bichloride solution and packed with bichloride gauze. Between the fingers the little tumor felt like a little round ball of frozen fat would feel, and a little thin thread-like filament could be seen running through it. The day following the incision the patient was entirely free from pain to the touch or otherwise. But on the following day she again complained of the same pain and in the same region to the left of the umbilicus. The same freezing and incision were again gone through with, and this time I removed a nest of three or four of the small tumors. The same freedom from pain followed the removal of this group. Being the day of the regular meeting of the New York Pathological Society, I exhibited these growths to the members of the Society, hoping, perhaps, they could shed some light on their character, but not one had ever seen or heard of anything just like it before. They were examined by the microscopist of the Society, who said that the growths "consisted of hardened fat and connective tissue, with a tiny nerve-filament running through the whole, and seemingly tightly in the grasp of the tumor itself." These were not the exact words of the report, but the sense conveyed is the same.

Relief was experienced for two or three weeks, when my patient again complained of the same little lumps in a new place. This time it was in the centre of the abdomen, about two inches above the symphysis pubis. The incision this time proved to be

so much larger and deeper than the former ones that the ice would not do, so I was obliged to resort to the use of the 4 per cent. solution of cocaine. Again I removed a group of five or six, which was followed by the same relief. These were shown at the next meeting of the New York Obstetrical Society, and again submitted to microscopic examination, the report being almost identical with the one previously made.

A short time after this a much larger and more extensive group of the little tumors made their appearance higher up on the abdomen, on the left side and directly under the left breast, on a line with the seventh or eighth rib. These required an incision three inches long to effect their removal. This incision had to be extended another two inches in a very short time in a straight line across the abdomen.

My patient and her family were beginning to get so discouraged about this time in regard to the frequent recurrence of the neurotic tumors that we determined on a consultation. Several of the most prominent gynecologists, surgeons, and specialists in nervous diseases were called in to see the case, and all, without exception, were as mystified as I myself had been in regard to the case, and not one had ever seen or heard of a similar case. The only advice they could give me was to keep on as we had begun, and remove the growths when the pain got to be intolerable. The incision under the breasts had to be continued until it extended completely across the abdomen to a corresponding point on the right side. This made a wound which was fully eight inches long by two inches wide. All of the wounds were kept packed with gauze, either bichloride or iodoform, and one and all healed very kindly by granulation.

About this time also she was seen with me by Dr. Martin, of Berlin, who expressed great surprise at the uniqueness of the case, and the remarkable fortitude of the patient. In all his extensive abdominal surgery he had never seen anything resembling the case; nor in German literature could he recall anything similar ever having been reported. In this country, and in London as well, I have looked very carefully into the literature of abdominal surgery, and also all works on ner-

vous diseases and pathology, but can find no allusion to any similar condition of affairs. Another microscopic examination was made in the third month after the beginning of the development of these growths. The report this time was again similar to the foregoing reports, except that the microscopist assured me that he could find one or two giant and round cells of sarcoma in the mass of fat, nerve, and connective tissue. This theory, however, I have never been willing to accept; first, on account of the good history and youth of the patient, and, second, on account of the final outcome of the case. It will not be necessary to go into detail as to each incision, because there were too many of them, and all just alike in treatment and effect produced. I should say here that all manner of constitutional treatment was tried without the slightest benefit being apparent. She was bromidized at one time, almost salivated at another, and again put under the complete influence of the iodides.

Electricity was tried in all its forms, especially electrolysis, by running first one, and then two needles under the skin, and using as powerful a current as I dared to use. The scalpel afforded the only real relief to the excruciating pain, and the patient used to welcome my return to that instrument and the cocaine with real gladness, when I would abandon in despair some other form of treatment which I had been trying. This condition and treatment continued on and off for more than two years. As fast as the growths would appear, I would remove them, and so the patient was kept in comparative comfort and freedom from suffering. At the end of the second year the attacks showed evidence of disappearing, and in the thirtieth month from the beginning of the first appearance of the growths, I made my last incision, removing a group of them from the upper part of the left thigh. Since then the patient has never been troubled with a return of the growths, though at one time she complained of terrible pain in her head, on top and at the base of the brain, and I began to fear the same trouble might develop in that region.

This passed off, however, and the poor woman is now, for the first time since her marriage, in fairly good health. In all, twenty-eight incisions were made in removing the neuro-lipomata, of which two were on the thigh and two were on the left forearm. The case has never been reported in full before, because I have been watching for three years past for any sign of a return of the disease. Now I think I am justified in considering the patient as cured, and can so report the case to be placed on record as such.

This is the full history of this unique case of multiple neuro-lipomata, and the patient owes her recovery to her indomitable pluck, grit, and perseverance, never once losing her firm conviction as to the final outcome of the case, though her doctor was more than once heartily discouraged.

#### DISCUSSION.

DR. H. J. GARRIGUES, of New York, asked whether there was any contra-indication to closing each of the wounds immediately with suture after having removed the tumor.

DR. SIMS replied that he did close the incision on the occasion of removing the first tumor, but the abdominal walls were very fat, and there was much exudation, which prevented immediate healing, so that he concluded it was best on the other occasions to leave the wounds open to granulate.

CANCER OF THE CERVIX UTERI:  
RESULT OF ITS TREATMENT BY HIGH AMPUTATION.

BY WILLIAM H. BAKER, M.D.,  
*Boston.*

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THE great importance of the subject, the rapid increase in the frequency of the disease, as particularly shown by the startling statistics of Sir Spencer Wells, in his lecture before the Royal College of Surgeons about two years ago, as well as my great personal interest in the subject, is my excuse for asking your attention to its further consideration.

There is perhaps no disease where it is more important to trace the future history of the case than that of cancer of the uterus. The very life of the patient may depend upon the close observance of the affected part for years subsequent to an operation for its removal. The rules which shall guide us in determining the best course to follow in our future practice can only be wisely decided after a careful consideration of past cases, a thorough knowledge of their termination or present condition having been obtained. The great difficulties surrounding this work has been the experience of many of our Fellows and can be well understood by all. Particularly is this the case in a large hospital experience, where little is seen or known of the patient except on the operating-table, yet here is where our largest experience is to be obtained. Pawlik could not trace 22 out of a total of 136 cases, while among our own number, our honored Byrne failed to find 160 of the 367 cases reported in 1889. While

the very full report of our late President, Dr. Reamy, in 1888, showed an inability to trace to completion 10 of the 55 cases reported. It is then a matter of congratulation that in the limited number of cases which I herewith present to the Society I can give them in their completeness. This, however, was accomplished only by the most persistent labor, and necessitated the aid not only of the medical profession, but many town clerks, undertakers, police and other city officials, and even the public press through most alluring advertisements. And I would here take the opportunity to thank the various members of the profession, most especially Dr. H. C. Baldwin, who have so cordially given their time to the observation of many of these cases, being assured that the success which has attained in some of them is due in no small degree to their early detection of some slight evidence of returning disease, while it could be attacked by subsequent operation.

In collecting the statistics of cases where any radical operation has been attempted, one is surprised to find what a small proportion this class bears to the whole number of cases seen or even operated upon by a more or less palliative method for symptomatic relief.

Dr. Clement Cleaveland, in the fourteenth volume of our *Transactions*, referring to his large service in the New York Cancer Hospital, says: "The majority of cases of carcinoma uteri admitted to the hospital are already well advanced, for which the treatment is essentially palliative."

In the thirteenth volume of our *Transactions*, in the article by Dr. Reamy, reference to which has been already made, during the ten years covered by his report, to offset the 55 cases where the radical operation of high amputation was performed, were 250 cases, which, when first seen, were too far advanced to admit of entertaining any hope from this procedure; and this small proportion of really hopeful cases appears to be the experience of all observers.

In my own report of the first series of cases in 1882, out of

47 cases only 12 were found suitable for radical operation; and during the seven subsequent years, from 1882 to 1889, of the whole number of cases observed, being 92, only 16 were such as offered any hope from high amputation.

It is then an interesting question to ask ourselves at the start, Why is it that the specialist sees comparatively so few cases at a sufficiently early stage of the disease to accomplish the most by a radical operation? The answer is twofold.

First. The early symptoms are not marked; pain, as a rule, being absent until late in the progress of the disease; and hemorrhage and leucorrhœal discharge are considered by the patient as conditions to be expected at the menopause, which she supposes is about to take place.

Secondly. The general practitioner is too frequently inclined to delay any radical measures until he has wasted an amount of valuable time with useless remedies, which has destroyed any hope that might have been entertained for saving the life of the patient by a radical operation.

The first cause arises from ignorance of the patient and therefore her failure to consult her physician. Unfortunately the ignorance is the more excusable as the early symptoms are so ill-defined. It should, therefore, be borne in mind by the profession that the physicians are the ones to educate women to the idea that the climacteric period is not necessarily one of sufferance of all the evils that they have believed, and that if hemorrhage occurs, there must be some pathological reasons for it, and the same in regard to leucorrhœal discharges. Thus they will be led to turn to their physician for advice when any deviation from the normal condition presents itself. In the second cause we have less excuse to offer for the ignorance of the physician. If he does not know the condition or importance of the diseased state which he finds present, he should be honest enough to say so. He should consider it his duty carefully to examine every case that presents any of the possible rational signs of this disease, not alone digitally, but by the aid of the speculum. He should



not be content to delay the more thorough examination by removing a portion for microscopical examination in any doubtful case, satisfied with the idea that a little time will determine the true nature of it, or that he will see the effect of this or that application to the local disease, or by trying to convince himself that he ought not to alarm the patient by making so much of her trouble as would be entailed by the necessary examination. He should remember that the life of the patient is in his hands, and his consideration of her feelings at this time may be brought up against him later, and thus he be justly censured for having failed to offer her the means of recovery while it was possible to perform a radical operation.

It is, therefore, necessary that the physician himself should have a well-grounded belief in the good which may result from operative interference, else we cannot expect him to insist on carrying out the necessary steps to lead the patient to such means of relief. With a view of encouraging the faithful worker in this field of surgery, as well as awakening a spirit of hopefulness in the non-believing physician or surgeon, I have searched for the cases which I reported in 1882 and subsequently in 1886, and now am able to give you an account of them after nearly ten years from the original report.

At the first report in 1882 there were 10 cases in which my operation of high amputation had been performed without any death from the operation, which included all the cases where the said operation was carried out in its entirety, out of a total of 47 cases seen during the previous five years. This report did not, however, include 2 cases where the complete operation was not performed, in that after the high amputation had been done, the wound was closed with silver sutures instead of using the thermo-cautery to the whole denuded surface, and in which cases the disease returned within a few months. It was probably these 2 cases which led me to abandon the closing of the wound and the substitution of the

open method of treatment after applying the thermo-cautery, which application of heat by the cautery I consider of equal importance with the thorough removal of the disease, which is so strongly insisted upon by Dr. Byrne, and the importance of which is shown by the excellent results obtained by him, and also by Braun, of Vienna.<sup>1</sup> Eight of these 10 cases were living and well at the time of this first report, having enjoyed a varying respite from the disease of from a few months to four years. At the second report on these cases in 1886, 6 of the 10 cases were living and well after a varying interval of from four to eight years, the remaining 2 cases having succumbed to the disease, one after a few months, the other after two years. Of this 60 per cent. of cases reported well after an interval of not less than four years, I am now able to report 50 per cent. of the original cases well after a period of from ten to twelve years.

The first case, Mrs. Dwight, known in the report as Dr. Morris's case, died October 18, 1886, probably from a return of the disease after a respite of eight years. For some time there was much uncertainty in regard to the cause of her death, as no autopsy was allowed, and in the discussion of Dr. Reamy's paper before this society in 1888, I expressed the opinion that this patient died of some other disease; but on a careful consideration of all the rational signs present, both from Dr. Morris, who attended her a few months previous to her death, as well as from the account of Dr. Hammond, of Charlestown, who attended her at the time of her death, I think there can be little doubt that she had a return of the disease, which caused her death through a recurrent peritonitis.

The second case was that of Mrs. Frost, upon whom I operated November 8, 1879, and within a month did a slight secondary operation with curette and cautery. With the exception

<sup>1</sup> "Malignant Disease of the Uterus," by W. T. Lusk, M.D. American System of Gynecology, page 632.

of suffering dysmenorrhœa from the very small channel left by the contraction of the cicatrix, she has been perfectly well since. Two years ago she began to menstruate at long intervals, and now, at fifty-four years of age, that process has ceased. I made a careful examination of her both digitally and with the speculum July 16, 1891, nearly twelve years from the time of her operation, and found no evidence of any return of the disease—in fact, she is in perfect health.

The third case was that of Mrs. Davis, referred to me by Dr. S. W. Langmaid. She was operated upon January 31, 1880, and again June 30th of the same year. She was a widow at the time of her operation, but married again some five or six years ago, and it was with great difficulty that I was able to find her. I examined her May 19, 1891, and found her perfectly well. I doubt if a more hale and hearty looking woman of sixty-six years of age can be found. It is now nearly twelve years since the first operation, and there is little or no uterus to be felt, the vagina ending in a blind pouch.

The fourth case was that of Mrs. Adams, referred to the Free Hospital for Women, by Dr. Belt, of South Boston, who had diagnosticated cancer of the cervix at the birth of her last child, three months previous to my seeing her. The diagnosis was subsequently confirmed by the microscopical examination, which was made in all the cases reported. Her operation was performed October 7, 1880, and within two months I was obliged to use the curette and cautery again to destroy a slight cropping out of the disease. Since this time she has enjoyed good health. She is now forty-seven years of age, and is still menstruating. She has for some years past filled the position of matron of one of the largest of our public institutions of Boston. I examined her May 4, 1891, and found her entirely free from any evidence of disease. It will thus be seen that she has had a respite of nearly eleven years.

The fifth case was that of Mrs. Haines, referred to me by Dr. E. H. Stevens, of Cambridge. I operated upon her at

the Free Hospital for Women, May 24, 1881, and during the subsequent three years she was operated upon four times for some suspicious-looking out-growth at or near the original wound: the first time by Dr. Stevens, the next two times by Dr. F. H. Davenport, and the last time by myself. I made a careful examination of her April 23, 1891, and found her perfectly well. She is now matron of one of the city institutions of Cambridge, enjoying good health over ten years from the date of her first operation.

The sixth case was that of Mrs. France, referred to the Free Hospital for Women by Dr. Cox, of Holyoke, Mass. She was operated upon January 26, 1882, and within four months I was obliged to cut through the cicatrix to let out a collection of retained menstrual flux, this being the only instance in my experience where this has become necessary as a result of the cicatricial retraction following the operation. She was most carefully examined with the speculum April 14, 1891, by Dr. Julia M. Patten, of Holyoke, who reported her entirely free from any return of the disease, and saying, "She has increased much in weight of late, presenting a most robust appearance." In a letter received from her recently she reports her in good condition, although no speculum examination of her was made at that time. Thus nearly ten years has elapsed since her operation.

The summary of this first series of cases shows 50 per cent. of them well from ten to twelve years after the date of the operation.

The real success of any operation for cancer of the cervix uteri can only be determined by the length of respite from the recurrence of the disease, and this can only be ascertained by the greatest care and patience in the following up of cases, and in learning their exact condition for years afterward. To the family physician, who lives and grows old with three generations, this may seem an easy matter, but to the specialist in extensive hospital and consultation practice it is a most difficult, painstaking, and oftentimes impossible undertaking.

Contrary to the opinion of many authorities, it is a matter of the most vital importance which method of procedure we adopt in cases of this class, and the fact that our operation has removed all the disease which to the eye or touch was present, is not by any means a safeguard against its rapid recurrence. In fighting such a destructive disease, that knows no limitation of human structure, we should call to our aid every sense that can help us to make sure of its complete eradication, and having removed all the portions which to the eye or touch seem infiltrated, leaving only healthy tissue behind (said operation to be done with scissors and knife), we are then to make doubly sure of the result by the most thorough cauterization of the whole surface—going over and over the denuded portion until it presents a veritably black, charred face.

I have not found in my experience the objection to the first part of this operation made by our honored Fellow, Dr. Byrne. He says on page 97 of the fourteenth volume of our *Transactions*: “If ordinary cutting instruments, such as scissors or scalpel, be first used to remove diseased parts, it will rarely be possible to proceed with the final and by far the most essential part of the operation—that is cauterization, as it ought to be done—without subjecting the patient to a second ordeal for this special purpose. Plunging any actual cautery instrument into a mass of bleeding or otherwise wet tissue, will certainly fall far short of the desired object.” Now I fully and most heartily agree with him in regard to the importance of the thorough use of the cautery; but I cannot give up the use of scissors or scalpel in first removing all the disease possible. Neither can I give up the aid of the sight and touch in bringing about this object, as I should do if I made use of the cautery from the beginning. As a matter of fact, a great part of the success in the first part of my operation, or that of dissecting out the supra-vaginal cervix, which, as we all know, is the part where we are most likely to have troublesome hemorrhage, depends upon the prevention or immediate arrest of such hemorrhage, thus enabling us to pro-

ceed with a clean wound. For if the vagina is repeatedly and rapidly filling with blood, we shall do our work only imperfectly. Firm traction on the cervix will do much to prevent troublesome bleeding, but many times it becomes necessary to carry a stout, twisted silver ligature through each lateral vaginal vault so as to include the main uterine artery; after which we can generally proceed as with an ordinary dissection. The advantage of the silver ligature is that, as the operation proceeds, the shrinking of the tissues makes the ligatures loose, and bleeding again takes place. By an extra twist or two of the ligature, seized close to the bifurcation of the wire, we at once have it under control. This it may be necessary to do two or three times during the operation. Then again when we come to the second part of the operation, or the substitution of the cautery, we can apply the instrument without any fear of severing our ligature. I would not be understood by this to depreciate in any sense the importance of the thorough use of the cautery, for I am in most hearty accord with Dr. Byrne in considering this part of the operation perhaps the most important as a safeguard against future recurrence of the disease. We cannot be too thorough in working against the inroads of such a terrible disease.

If I might be allowed to criticise so admirable a paper, supported by such remarkable results, as that of our ex-president, Dr. Reamy, which I do with great diffidence as I may not correctly understand his method of operating, it would be this, that he depended more upon the cautery to meet the necessities of the case in subsequent recurrence of this disease, rather than as a part of the original operation. In this opinion I may be mistaken, but in carefully reading his paper, together with his remarks on Dr. Byrne's paper the following year, I am impressed with this fact. I quote from the discussion of Dr. Byrne's paper, page 105, vol. xiv. Dr. Reamy says: "But if the disease be not all removed, it will as certainly return after the cautery as after other methods. It is the thorough removal of the local disease that

assures the cure in an encouraging number of cases, and the method by which removal is accomplished is of but little moment, so it be safe. For my own part, for reasons given in a publication already before the profession, I prefer in many cases the scissors to the cautery."

To this I should reply, Why prefer either? why not make use of both as a part of each operation? The best results that have been yet obtained have followed the use of the cautery; and evidently the effect of the heat of this agent at a red glow cooks the tissues—if I may be allowed the expression—beyond where the scissors or knife have penetrated, and thus has a peculiarly destructive effect upon the tissues invaded by the disease. It is true that this may be unnecessary in a certain small number of cases, but we cannot tell in advance which are the cases which will require it most, and it is best to be as sure as possible from the beginning. To emphasize this point I would refer to the sixth case in the series just reported, in which, although I cut freely and to all appearances was outside of the disease and in healthy structures, and should have considered it a case which more than most could be safely left without the use of the cautery, yet from continued practice, as well as from my firm belief in the efficacy of the cautery, I fortunately followed out the usual steps of my operation. I say *fortunately*, for, as the subsequent microscopical examination of the cut surface of the part removed showed, the disease extended on all sides beyond the parts removed; and thus it would seem certain that, had it not been for the destruction of so much more of the remaining tissues, the disease would have quickly returned. By its use ten years have intervened without any present evidence of return.

Let us consider now the second series of cases, which include all those in which I performed high amputation, from January 26, 1882, to same date, 1889. I have not carried the series further because the multiplication of statistics in these cases is only misleading, if success is claimed when operated upon within two or three years.

CASE I.—Mrs. G. C. was referred to me by Dr. A. B. Briggs, of Ashaway, R. I., March 13, 1882. She was forty years of age, had given birth to two children, and had suffered no miscarriages. She had an old laceration of cervix, and the cancer had evidently developed from it, nearly filling the upper vagina. There was no history of hemorrhage other than a gradually increasing menorrhagia; offensive leucorrhœa for over a year; pain not marked. March 21st, operation. Dr. Briggs had the subsequent care of the case; recovery good. Disease recurred in a little more than two years, and secondary operation was done with curette and cautery. Finally, disease recurred in anterior vaginal wall, and she died February 19, 1885.

CASE II.—Mrs. J. L., of Worcester, Mass., was admitted to the Free Hospital for Women, May 13, 1882. She was thirty-four years of age, had two children, and no abortion; health good up to eight months before; history, severe hemorrhage and offensive leucorrhœal discharge; no pain; large mushroom-like mass of disease sprouting from a lacerated cervix. May 14, 1882, operation; recovery good; patient discharged from the hospital June 24th.

This case was not seen again, but I ascertained from the city clerk that her certificate of death was signed, "peritonitis and cancer of the uterus," and dated June 4, 1888. This patient, dying six years after the operation, shows the importance of keeping all cases of this class under observation for many more years than is generally thought necessary.

CASE III.—Mrs. B. B., of Blackstone, R. I., consulted me early in December, 1882. She was fifty-three years of age, and had been married twice; first marriage at nineteen years of age, and the second at twenty-one; had no children; no miscarriages; menopause at forty-three; six months before began to flow again; nearly constant slight flow of blood, rather than any severe and exhausting hemorrhage; some offensive leucorrhœal discharge; pain in the back a marked symptom, not affected by position of body. Operation December 7, 1882. The disease here was of the cervical form, and the ulcerative process had nearly kept pace with the infiltration. It was therefore with great difficulty



that the supra-vaginal cervix was dissected out, so friable was its structure. The uterus, however, was movable. Recovered well, and returned home in a month from the time of the operation. She was seen at varying intervals afterward for a time, but, changing her residence, I lost track of the case until about two years ago. In a letter from her husband dated Lewiston, Idaho, April 23, 1891, he reports her in perfect health, saying: "Since she arrived in this city about four years ago, she has not had any use for a physician, and has neither called on one, nor had one call on her. Plenty of physicians here, and plenty for them to do outside of my family." She has thus enjoyed a respite of more than eight years.

CASE IV.—Mrs. J. G., a resident of Boston, consulted me June 20, 1883. She was forty-four years of age, and had been married nineteen years; no children; four miscarriages at the third to fourth month, during early years of married life; health good until two years before; for one year immediately before, menstruation excessive and anticipated by a few days; some leucorrhœal discharge, non-offensive; pain in right groin, extending down thigh, and in right breast, at times severe; entire cervix involved in the disease; vagina or cellular tissue about supra-vaginal cervix not involved. Operation June 23, 1883; recovered well. Within following year secondary operation with scissors, curette, and cautery; for about four years had fairly good health, followed by symptoms of nephritis. She died December 29, 1889, of interstitial nephritis.

I am indebted to Dr. V. Y. Bowditch for the opportunity of seeing and examining carefully this patient a few days before her death, and I found not the slightest evidence of any return of the disease. Thus she had no recurrence of cancer in six and one-half years; dying of some other disease after that length of time.

CASE V.—Mrs. F. P. W., of North Brookfield, Mass., was referred to the Free Hospital for Women by Dr. Francis Minot, February 22, 1884. She was forty years of age; had been married twenty-three years; one child, and no abortion; was operated upon in the Worcester Hospital five months before; complains

of copious offensive leucorrhœal discharges, at times bloody; severe pain in right hip and back; no severe hemorrhages, neither excessive menstrual flow. Operation March 6, 1884; recovered somewhat slowly; was obliged to apply chloride of zinc to suspicious-looking points; returned to the hospital after six months for secondary operation with curette and cautery; enjoyed good health until the summer of 1889; had a stroke of apoplexy, followed by paralysis of one side of the body; never fully recovered; died November 3, 1890.

For this statement I am indebted to her husband, as a letter addressed to Dr. Warren Tyler, the physician in attendance at the time of her death, was returned to me with the account of Dr. Tyler's death within a few months from that of his patient. She then lived nearly six years without any return of the disease, and died from an independent affection.

CASE VI.—Mrs. H. J. B. was referred to me by Dr. L. F. Osman, of Boston, March 5, 1884. Forty-three years of age; married eighteen years, and gave birth to four children; three abortions; considered herself well until seven months before; suffered from dragging, bearing-down pains, and soreness in lower abdomen; no sharp pain; constant bloody discharge between menstrual periods for seven months; no severe hemorrhage; no excessive menstrual flow. Operation March 7, 1884; recovered well; subsequently cared for by Dr. Osman; no secondary operations allowed; disease quickly recurred in the uterus and extended to the left ovary; the patient died November 10, 1884.

She thus died from recurrence of the disease within eight months from the time of her operation.

CASE VII.—Mrs. W. E. was referred to me October 20, 1884, by Dr. J. L. Wells, of Boston. Fifty-six years of age; married thirty years; one child, and no miscarriages; menopause at fifty; slight discharge of blood at three different times during past two months; some offensive leucorrhœa; pain complained of in legs and feet for two years, and in upper left thigh more recently; entire cervix involved, and infiltration invading left vaginal wall, impairing mobility of the uterus on that side.

Operation November 4, 1884. By carrying a large, broad ligament needle far out toward left pelvic wall and securing a twisted silver ligature, the blood-supply was so thoroughly cut off that I was enabled to carry the dissection well out into the broad ligament, as well as the lateral vagina, in addition to doing the usual high amputation of the cervix. She recovered well, and within five months I was obliged to perform a second operation with scissors, curette, and cautery. From this time on, the patient has enjoyed good health and is now well, it being nearly seven years from the date of her first operation.

In a letter received from Dr. Wells a few months since, he says: "In answer to your questions I would say that your patient has had no hemorrhages, no leucorrhœa, no vesical symptoms for years. Has gained fifteen pounds since leaving the hospital, and her general health is very good." Here is a case which seemed almost hopeless from the start, yet by carefully carrying out each step of the operation, and attacking the disease again on its reappearance, her life has been saved and she is still well after nearly seven years.

CASE VIII.—Mrs. A. S., of Providence, R. I., was referred to me by Drs. Carr and Porter, of that city, October 29, 1884. Twenty-seven years of age; married ten years; two children; no abortion; complained of a copious, offensive leucorrhœa for two years; continuous hemorrhage for four months, requiring two or three napkins a day; pain in back and sides since flow began, characterized as severe, though not enough to keep her awake. Operation November 7, 1884; recovered well; no secondary operation. September 27, 1890, Dr. G. W. Porter, of Providence, made a speculum examination of this patient, and reported her entirely free from any local return of the disease, and in good health. August 15, 1891, he reports her well. Thus she is still enjoying a respite from the disease after nearly seven years.

CASE IX.—I was kindly asked to operate upon Mrs. C. A. M., of Providence, R. I., by my esteemed friend, Dr. G. W. Porter, of that city, who expressed a desire to follow the steps of my

operation. Patient thirty-six years of age; married seventeen years; four children; no abortions; no severe symptoms complained of; some leucorrhœa, backache, and pain in the groins; disease involved the entire cervix, and encroached somewhat on the posterior vaginal wall. Operation January 27, 1885; recovered well; no secondary operation.

I saw this patient but once afterward, which was April 14, 1885, at which time there was no evidence of any recurrence of the disease. Dr. Porter took all the subsequent care of the case, following it up closely from time to time. In answer to a letter of inquiry as to her condition, he wrote me September 27, 1890, that he had recently examined her with the speculum and found her free from any return of the disease and in good general health. A second communication, February, 1891, reports her still well. Thus, after nearly six years, there is no evidence of any return of the disease.

CASE X.—G. H. was admitted to the Free Hospital for Women in February, 1885. Thirty-four years of age; marriage questionable; one child; an abortion six months before entrance to hospital; for two months severe hemorrhages; lost strength rapidly; no leucorrhœal discharge; pain not marked; whole of cervix involved; disease nearly filled the vagina. Operation March 5, 1885. On account of the poor quality of the silver-wire ligatures, which kept breaking, the second part of the operation, or the cauterization, was only imperfectly carried out; and subsequently, when the specimen was examined microscopically and the disease still found present on the left side of the cut surface, I felt it necessary to make another attempt to remove more of the disease. This I did April 7th, by attempting to ream out another portion from the body of the uterus, guided by the point of the sound kept at the fundus. But this was a difficult undertaking, inasmuch as the usual landmark of the cervix was gone, and I found that I had cut quite through the side of the uterus. Nor do such disasters come singly, as I discovered, on removing the sponge-holder, that the sponge had

been left in the peritoneal cavity. This, together with the smart hemorrhage which was going on, made it look rather dubious for a few moments. By the aid of the hand of my assistant crowding the parts well down into the pelvis from above, I was able to touch the sponge through the rent in the uterus and thus seize it with forceps and remove it. It was then the work of but a moment or two to pass the sutures through the wall of the uterus from within, thus bringing the surfaces of the rent together, which effectually controlled the hemorrhage. I was then able to dry the parts well and apply the thermo-cautery. This patient was making a good recovery, and was able soon to be about the ward. She suddenly left the hospital against my advice, and died five months afterward near Portland, Me., with all the rational signs of a return of the disease.

This case well illustrates the difficulties of cutting out a second cone from the body of the uterus when the usual landmarks are gone; also the trials sometimes to be met in following the results of operations, for her after-history was only learned by repeated and alluring advertisements in the daily papers.

CASE XI.—Mrs. F. H., of Westford, Mass., was referred to me by Dr. J. B. Heald, March 20, 1886. Forty years of age; married eighteen years; three children; no abortions; had always been well until within seven months; complained of severe hemorrhages at intervals of one or two weeks; no special pain; no offensive leucorrhœa. Three months before Dr. Heald operated for removal of the disease with scissors and galvano-cautery; was still a small portion of the infra-vaginal cervix left, deeply infiltrated with the disease, also each lateral portion of the vagina; uterus fixed; altogether not a hopeful case upon which to do any radical operation. Operated March 22, 1886; recovered well; secondary operation with scissors, curette, and cautery twenty months afterward; disease recurred again, and patient died July 2, 1888, a little more than two years from the date of first operation.

Dr. W. J. Sleeper, under whose care she was at time of death, writes me: "There was secondary growth of some nature, evidently connected with the ovary."

CASE XII.—Mrs. S. R., of Waltham, Mass., was referred to me by Dr. Willis, of that city, November 29, 1886. Fifty-one years of age; married thirty years; two children; no abortions; menopause at forty-eight; after cessation of three years, began to flow again nine months previous; flow constant thereafter; no severe hemorrhage; no offensive leucorrhœa; no pain. Operation December 1, 1886; recovered well; no secondary operation. The after-treatment of the case was entirely in the hands of Dr. Willis, who watched her most carefully for any evidence of returning disease, but such never appeared. She died in August, 1888, from exhaustion occasioned by mental disorder. In answer to a letter addressed to Dr. Willis, he says: "There was no local return of the disease. There was no secondary growth. A few months before her death her mind became affected, there was great loss of flesh, and she died from complete exhaustion."

CASE XIII.—Mrs. K., of Corinth, Vt., was referred to me by Dr. O. W. Doe, in May, 1888. Forty-four years of age; married nineteen years; two children; two abortions; severe hemorrhage and some leucorrhœal discharge occasionally mixed with blood; very little pain. Operation May 24, 1888; subsequently two secondary operations with scissors, curette, and cautery; recovered well from both. August 21, 1891, I examined her carefully with the speculum, and found her perfectly well. Thus a respite of more than three years has been gained for her.

CASE XIV.—Mrs. F. A. S., of Boston, consulted me October 27, 1887. Thirty-eight years of age; married sixteen years; two children; no abortion; for four or five months previously complained of irregular hemorrhage, though not severe; no offensive leucorrhœa; no severe pain. Operated November 7, 1889, assisted by Dr. E. J. Forster, of Charlestown; recovered slowly, but well; recurrence of disease within six months; treated with chloride of zinc; died November 28, 1888, in one year from the time of operation.

CASE XV.—Miss M. was referred to me by Dr. A. D. Sinclair, October 31, 1888. Forty-seven years of age; had always

enjoyed good health until within a year; menstrual flow then became too frequent and lasted too long, continuing slightly throughout the month; some offensive leucorrhœa; sharp shooting pains in region of rectum and in lower abdomen: examination showed ulcerative process had already destroyed about one-third of infra-vaginal cervix. Operation November 1, 1888; recovered well; no secondary operation. February 22, 1891, I examined her carefully with the speculum, and found no evidence of any return of the disease. The vagina now ends in a blind pouch. She has never menstruated since the operation, neither has she any of the symptoms of such process. Thus she has had a respite of three years.

CASE XVI.—Mrs. C. L. S. was referred to me by Dr. Chamberlain, of Lawrence, Mass., in January, 1889. Fifty-four years of age; been a widow for twenty years; three children; one miscarriage; menopause at fifty-one; about two months before complained of some thin leucorrhœa, somewhat offensive, and at times bloody; no severe hemorrhage; pain the prominent symptom, existing in left groin and hip, beginning at same time as discharge; entire cervix involved in the disease. Operation February 16, 1889. In dissecting out the supra-vaginal cervix the disease encroached so closely on the bladder-wall that a portion of that viscus was removed, and subsequently the opening closed. She recovered well, and no secondary operation was necessary. Repeated examinations failed to discover anything but a healthy appearance. I examined her carefully with speculum in May, 1891, and have since heard from her of her continued good health. Thus she has enjoyed a respite of nearly three years.

The case of Mrs. Cole, of Attleboro, Mass., has not been included in this list, as I was not allowed to complete the operation. She had been reduced to the last degree by hemorrhages, following a severe attack of diphtheria a few months before, and there was much question whether she could endure the shock of the operation. While dissecting out the supra-vaginal cervix, her immediate condition became the cause of great anxiety, although there was no hemorrhage to warrant

such fear. The physicians in charge desired me to discontinue the completion of the full operation. Thus a case which promised at the start to be favorable for a radical operation was changed to a palliative one, as all the disease was not removed, neither the cauterly used. She died from the disease in about two weeks from the time of the attempted operation.

As this was the only case in my experience which had succumbed to the disease within a short time of an attempted operation, I thought best to report it in this connection, although I could not see any good evidence to consider her death caused immediately by the said operation.

In analyzing seven years' work in this operation, from 1882 to 1888, we find therë were 16 cases in none of which did death occur from the immediate effect of the operation. In 10 of these 16 there was no return of the disease ; 1 was well after 8 years, 2 after 7 years, 3 after 6 years, 3 after 3 years, and 1 after 2 years. Thus there was no evidence of any recurrence of the disease in  $62\frac{1}{2}$  per cent. of the cases operated upon. Of the 10 cases where there was no recurrence, 3 died of some independent disease, viz. : 1 died of interstitial nephritis, 1 of paralysis following apoplexy, and 1 of mental disease. There are then living to-day, after a varying interval of from three to eight years,  $53\frac{2}{3}$  per cent. of the remaining cases. Of the 16 cases, 6 died from a recurrence of the disease ; of these, 1 lived 6 years, 1 lived  $2\frac{1}{2}$  years, 1 lived 2 years, 1 lived 1 year, 1 lived 8 months, and 1 lived 5 months

The claims then that I would make for this operation are : First, greater safety to the life of the patient ; second, longer respite from any recurrence of the disease. In support of these claims it is with pride that I refer to the years of work of our honored president, both as a skilled operator in its performance, and as contributing to our literature monographs in which preëminence is given to this operation over the more dangerous one of vaginal hysterectomy. Nor must I forget to refer to the most sincere and conscientious work of our secretary in this operation, as evidenced in his admirable



paper before the New York Obstetrical Society a little more than a year ago, in which, as a result of his large experience at the New York Cancer Hospital, he strongly advocated high amputation in all cases of cancer of the cervix.

The want of success of some operators in this field must result either from a lack of realization of the thoroughness which is necessary in the work of removal, cutting well outside of all the disease and in healthy tissue; or else from their becoming confused by the hemorrhage, and not having a knowledge of the ready means of its control; or still again, from the non-recognition of the importance which the thorough use of the cautery has in the destruction of still more of the tissues on the border-line of the diseased part.

Much may be gained in some cases, even though the disease has extended beyond the cervix to the anterior or posterior vaginal walls, necessitating the opening of the bladder or the peritoneal cavity. The dangers of the operation are but little increased even though the peritoneal cavity or the bladder be entered, and a portion of the upper vagina removed with the cervix, provided the opening be closed with silver sutures, and the cautery applied. Nor should we be discouraged, even though the disease has extended somewhat laterally, and thus interfered with the free mobility of the uterus, as was instanced by Cases VII. and XI. of the second series.

Too short a period of time is generally accepted as a standard of respite from recurrence of the disease, upon which to base statistics. From the fact that one case, in the first series reported, died from the disease eight years after the operation, and that another, in the second series, had a recurrence, to which she succumbed after six years, the great importance is shown of keeping all of these cases under observation for many years.

A study of the foregoing would seem to indicate:

First: That a thorough removal of all the disease should first be made with scissors, scalpel, or uterotome, keeping well outside the infiltration, and apparently in healthy tissue.

Second : That the wound should not be immediately closed, but that every portion of it should be kept under observation until entirely healed.

Third : That the thorough application of the cautery is an all-important factor in the success of this operation.

Fourth : That it is often necessary to do some slight secondary operation to insure success.

Fifth : That the cases must be under close observation for years.

Sixth : That the collecting of statistics of operations based upon a respite of eighteen months or two years is of little value, except to show the mortality of any particular operation, or to show in what percentage of cases the disease recurs within that time.

As a result of my experience with this operation as well as with vaginal hysterectomy, I would present the following :

First : That in all cases of cancer of the cervix which have not become fixed by an extension of the disease, high amputation, with the application of the cautery immediately following, is the safest and best method of treatment.

Second : That vaginal hysterectomy should be reserved for cases of cancer primarily affecting the corpus uteri, or those exceedingly rare cases of cancer of the cervix where the disease has extended to the entire corpus without fixing the uterus.

#### DISCUSSION.

DR. JOHN BYRNE, of Brooklyn.—It is hardly necessary for me to say that I have listened with great pleasure and much satisfaction to the able paper of my friend, Dr. Baker. It bears the evidence of careful observation and a large experience in a field which, it is to be regretted, has, up to the present time, had few laborers. My views with regard to the treatment of cancer of the cervix uteri, and the results obtained by my method of operating, are already matters of record. Therefore I might content myself by merely welcoming this additional evidence

brought forward to-day in favor of the position which I have occupied on this question for over twenty years. But there is one point, at least, to which I must refer and claim your indulgence, and that is the operative procedure to which the term "high amputation" is applied, *regardless of its limits*.

I have already stated before this Society and elsewhere that high amputation in the hands of an expert operator, so far as the removal of diseased uterine tissue is concerned, can be more thoroughly accomplished, and with greater safety, by the delicate platinum knife, such as I am in the habit of using and which I now exhibit, than by scalpel, scissors, or any other means.

I have, then, not only no difficulty in effecting by galvano-cautery what is, at least, equivalent to the highest possible amputation, but, in addition to the avoidance of hemorrhage—in itself no small matter—the action of the cauterizing agent, the most potent germicide, on outlying structures is such that neither immediate sepsis nor traumatic infection can possibly occur. These are clinical facts which the advocates of other methods cannot fail to appreciate, and which, in my opinion, cannot much longer continue to be ignored or treated with indifference when we are confronted with the question as to a choice of methods.

There is, however, such widespread misconception regarding the thoroughness with which a cancerous uterus may be treated by galvano-cautery, and comparatively so little known as to the proper manner of conducting such operations, that the following brief excerpt from the history of a patient operated upon July 7, 1871 (published in 1872), may be of interest in connection with the discussion of Dr. Baker's timely and welcome paper:

"The cervix having been removed, the platinum knife (curved) was now applied to the deeper tissues beyond, which were cautiously sliced off, piece by piece, laterally as well as upward, to the utmost extent deemed safe. When the uterus was thus scooped out, a bell-shaped cavity was left, which from the bottom to the fundus uteri measured but half an inch."

This patient is now living and well after twenty years, and is known to another Fellow of this Society, who was present at the operation.

In further illustration of my method, I would submit the following from one of my cases operated upon in 1875 and published in 1877:

“An expanding double tenaculum (the instrument here shown) was passed well up the cervical canal, and when opened the uterus was so firmly held that any degree of traction could be steadily maintained. A circular fissure close up to the vaginal insertion was next made for the reception of the platinum loop, the cautery knife being directed obliquely upward and inward. The wire being now adjusted and firm traction kept up, the loop was contracted at proper intervals (tightening the slack merely) until the part embraced was severed. A sharp curette was next passed within the uterine cavity and the latter was thoroughly scraped out. Sufficient space having thus been made for another electrode, but having a larger cauterizing area, the interior was gone over so as to remove or destroy all softened and diseased tissues with which it might come in contact. The cavity was now sponged out carefully, and a tampon soaked in acetic acid and tannin applied for a few minutes, so as to prepare the part for the next, and perhaps the most important, step of the operation. A dome-shaped cautery instrument, brought to a *cherry-red heat*, was now applied to the excavation in every part, and, when withdrawn, the cavity was sponged and dried, and again cauterized until the parts were completely charred and black.”

I may state that I have occasionally modified the proceeding just described by continuing the dissection of the cervix from the bladder, rectum and lateral connections, as in vaginal hysterectomy, and completing the amputation with the cautery knife instead of the loop. It is also proper to remark that, in my report of 1889, the patient whose case I have just referred to was included in the list of those who could be traced but for a short time only, subsequent to the operation, and belonged to class II., consisting of cases in which the entire cervix was involved. She turned up unexpectedly about six weeks ago, calling to consult me regarding suspiciously indurated sub-maxillary glands, but a careful examination of her pelvic organs

failed to discover any evidence of disease. The period of immunity in her case is, therefore, sixteen years.

The same course was followed in a similar and apparently hopeless case in which I operated for the late Dr. J. Marion Sims, and at which Dr. H. Marion Sims assisted. She was perfectly well fifteen years after the operation.

My object in calling attention to these cases is, *first*, to show that the line of clinical investigation undertaken by me over twenty years ago has been ably supplemented by Dr. Baker's present and former contributions, as well as by Dr. Reamy's work in the same direction; *secondly*, in order that, while discussing this important subject, the two methods of procedure, that of the author of the paper and my own, may be conjointly and carefully weighed and estimated; and *lastly*, to emphasize what has been repeatedly demonstrated, namely, that by the adoption of either method and the abandonment of hysterectomy for cancer of the cervix uteri as a dangerous and unwarrantable mutilation the best results may be obtained and no lives sacrificed. [I have just been informed that the battery and instruments, such as I have used, may be obtained from Messrs. Kerstan & Kaysan, of Brooklyn.]

DR. THAD. A. REAMY, of Cincinnati.—I suppose there are gentlemen here who believe nothing that has been said during this discussion; who do not believe in anything which has been taught, and who have no patience with and no respect for the surgeon who, in modern times, would attempt what they call a "patchy" operation for cancer of the uterus. A conservative operation is a timid operation—anything short of total extirpation of the uterus is, according to them, "old fogy." I judge this to be the fact because at the last meeting but one of the American Medical Association that position was taken by a class of men skilled in debate, ready in speech, with numerous cases to report. One of the most earnest debaters on that occasion, as well as one of the most talented young men, when pressed in debate, said impatiently at the close of some remarks which I had made: "We expect no countenance, no encouragement from any man over fifty years old in total extirpation of the uterus for cancer."

I refer to this to show the spirit which characterized that dis-

cussion, and which characterizes the discussions on this subject in various medical societies, and pervades the literature of the subject in certain quarters—gives color to it, in fact constitutes it, so that a man who dares advocate high amputation for cervical cancer must encounter that sort of argument. It is no argument at all—simply denunciation.

These gentlemen advocate removal of the entire uterus simply on the ground that the larger the amount of the woman's anatomy removed by the surgeon, the stronger the evidence of his possessing advanced ideas and surgical courage.

I want to ask you who are present, no matter on what side you stand, what answer can be made to the statistics which have been presented in the paper just read? Does anyone doubt the truth or accuracy of the history of the cases? Does anyone doubt the diagnosis? Does anyone doubt that the treatment instituted in these cases was as stated? Does anyone doubt the results secured? This clinical testimony is valid. Dr. Baker has concealed no essential facts, nor has he done any padding.

Now, what answer can be made when we find some sixty per cent. of cures in the list of cases presented? What clinical defence can be made for substituting total extirpation of the uterus in this class of cases? I have carefully examined statistics; I have cautiously, honestly, and earnestly studied them, as I have seen them reported in the proceedings of the Chicago, New York, Philadelphia, and other societies throughout this country and in Europe. I know of no record which will bear scrutiny or an examination such as science demands, which surpasses this presented by Dr. Baker. You may say that he has not reported two or three hundred cases. But he has cited a sufficient number, and in a way that teaches more than one hundred or five hundred cases could teach us if they were presented in a haphazard, incomplete manner, as they are often reported in medical literature.

The author of the paper was correct when he understood me to say that I used the cautery in my earlier operations of this character more for the purpose of avoiding recurrence of the disease than for the primary condition. He is partly right and partly wrong, but in the main right. I did not then, and I do

not now, use the cautery where it is perfectly clear that the disease is confined at the time of the operation to the portio vaginalis. When the disease has commenced in the vicinity of the os, and has not gone beyond the cervical canal (of course, such cases are not very numerous, although several of mine were at that stage), I did not then, and I do not now, use the cautery in those cases; I use the scissors only. I make a swallow-tail amputation and close the wound with silver wire with a view of primary union; first, because I believe that the results will be better, as there is less damage to the tissue, there is not left such an amount of cicatricial tissue, and (on the principle that injuries sometimes give rise to cancer) there is less favorable basis for the development of the disease; secondly, because when these cases are so treated there is left a better conformation of the parts, the deformity being much less than if the cautery had been used extensively.

The author is correct in stating that in most cases, according to the report to which he has done me the honor to refer, I used the cautery only for recurrence of the disease. Profiting by the example of our master in this particular operation, and by the example of that other master who has given such a wonderful report after the use of the cautery exclusively, I now in all cases in which the disease is not confined to the portio vaginalis cauterize at the time of the primary operation.

One word with reference to the value of the method practised by the distinguished speaker, Dr. Byrne, who has just taken his seat. We all know perfectly well that in the use of the cautery in the treatment of disease no man in the country surpasses this gentleman in the ingenuity and skill which he brings to its execution. At the same time, those of us who are not so skilled with the cautery likewise know that it is extremely difficult, ordinarily, to get dry tissue. The effect of applying the cautery to almost any tissue is the immediate outflow of blood. The reason why I use the scissors before using the cautery, and tie the vessels farther out even than in vaginal hysterectomy, is that I can arrest the hemorrhage, and I can cut as close up to the ligature as I please and have little loss of blood. Then, the hemorrhage having been arrested, I use the cautery. I clear

away all the diseased tissue which I can discover before cauterizing. I am not skilful with the cautery to a degree that I am able, in a reasonable time, to avoid hemorrhage which the cautery itself will produce from the smaller vessels, as well as the outpouring of blood which may take place from larger ones. This is no criticism of the method which the gentleman describes, but an apology for myself, who am unable to get such good results from primary use of the cautery.

Now, what are the objects of a surgical operation for the cure of cancer of the uterus? Of course, there underlies this operation, here as elsewhere, the idea that in a certain per cent. of cases cancer is local; and if local, and it is thoroughly removed, it is for that patient, at least for a reasonable time, eradicated. We freely grant that in cases where the disease has extended to the body of the uterus, and not too far, hysterectomy is indicated; also in primary cancer of the body and in sarcoma. Yet where it has been confined to the cervix and the uterus has been removed, when recurrence takes place it takes place in most instances not between the folds of the broad ligament, but in different directions from behind the upper portion of the vagina, or laterally in this region. Since the disease recurs, therefore, generally in this locality, manifestly this is the field where removal should be most thorough. I submit that this thoroughness can be far more certain when only the cervix and outlying tissue are removed. We can remove all disease and close the wound all the more safely without disturbing the corpus uteri.

Those who have not mastered high amputation, and have taken a fancy for total extirpation, although they have performed it but a few times, seem to be impressed with the idea that it is the more brilliant procedure, and that the more tissue they have taken out the more likely have they removed the possibility of recurrence of the disease. The truth is that the more thoroughly they have removed the diseased tissue about the cervix, and safely gone into sound tissue adjacent to it, the more thoroughly have they eradicated the disease. To do high amputation well requires large experience in the operation. No one can perform total extirpation, tie the vessels and place the ligatures as far out posteriorly and laterally, use his scissors, or his



scalpel, or cautery, as thoroughly, dissect out as far from the disease in all directions, as in performing high amputation. That is the point which I wish to make. Those gentlemen who condemn high amputation ignore the statistics on the subject furnished by those who do have success with it—a success which comes of their belief in the method. In an operation not disturbing the pelvic roof, after cutting away with scissors, the field is far more exposed and easy of access by cautery. In bad cases I tie or clamp farther out from the cervical line in high amputation than I have seen anyone do in total extirpation.

Now, gentlemen, in conclusion, I wish simply to reiterate the statement that those of us who have had some success in high amputation, and have practised it extensively, have become enthusiastic over it. Our statistics have not been equalled by other methods. Our successes have not been equalled. I have seen more than one uterus presented at medical societies as having been removed for sarcoma, in which there was nothing but an endometritis. It was claimed, however, that the operation had been radical, and, therefore, that the patient had been cured. A distinguished German scientist, Saurenhau (*Zeitschr. für Geburtshilfe und Gynäkologie*), states that he has examined fifty uteri which were the seat of malignant disease, and he found that the disease was confined to the portio vaginalis in twenty-one, the cervix being involved in twenty-eight. He was unable to find any evidence of sarcomatous degeneration of the corporeal endometrium, or, in fact, any evidence of malignant change in the corpus, in a single case. The microscopic appearances were those seen in ordinary hyperplastic endometritis, spindle cells being uniformly present, but always in the vicinity of the hypertrophied glands. It becomes embarrassing when gentlemen show us these microscopical appearances and want to convince us that the brilliant operation of entire removal of the uterus has been justified by the pathological appearances, and that because of this radical operation the woman has been saved a recurrence of the disease. If you eliminate from their cases those in which the disease was confined to the cervix, you will find that the statistics will be turned upside-down.

DR. JOSEPH E. JANVRIN, of New York.—The operation of Dr. Baker and Dr. Byrne must be limited to cases in which there is *every presumption*, after a most careful examination not only of the cervix but of the interior of the uterus as well, that the disease is limited to the cervix. This preliminary examination must, it seems to me, include the microscopic examination not only of a portion of the cervix, but also, in many cases, of deep curettings from the cavity of the uterus. In many cases of *apparent* disease of the cervix only we find, by this microscopical examination, that the lining of the body is also involved, even when the ordinary physical examination does not indicate it.

There is a proper field for high amputation, most certainly, and the brilliant work of Drs. Baker and Byrne in that line has done much toward establishing it upon so sure a footing that no one can afford to pass it by lightly. Such results as both of these gentlemen have obtained is wonderful—the more so when we look at the rapid advance of this dread disease when, after *any* operation, if a nidus is left, recurrence is sure to take place.

I take it that the proper selection of cases, cases in which this disease has not invaded the body to any extent, and in which it is practically confined to the cervix, together with the most thorough removal of all diseased tissue and the destruction of as much surrounding tissue as is possible, are the factors in their success. Therefore, to my mind, this operation is to be made use of in a *limited* field only, and the question before us is this: Is it the best operation in this class of cases? That is a question which at the present time, I think, cannot be answered either affirmatively or negatively, and for this reason: The statistics of vaginal hysterectomy for *this class* of cases are not yet gathered. It will probably be years before they can be eliminated from the general statistics of vaginal hysterectomy. Until that is done it is unfair to both sides of the question to be too much influenced by the statistics presented by Dr. Baker. Now as to the cases in which vaginal hysterectomy is justifiable. It certainly is in all cases in which there is good ground to believe the body as well as the cervix is involved. Also in all cases in which the body alone is involved, provided in both of these classes that the disease does not involve the adnexa or surrounding tissues.

The class of cases presented by Drs. Baker and Byrne, to my mind, is a class which as yet is to a great extent *sub judice* as far as the election of an operation is concerned. I am frank to acknowledge that, in my own work, I am at present doing vaginal hysterectomy, and my results are as follows :

My own cases of vaginal hysterectomy have been limited to those in which the cervix alone, or the body alone, or the cervix and body alone were involved ; in which the vagina was absolutely free from disease, as was also the adnexa of the uterus. I have operated on twelve such cases, with ten recoveries from the operation and two deaths. The first and the ninth cases proved fatal. The operations extend as far back as five years. I have not gathered the statistics as to the ultimate results, but intend to, for the only fair way to decide the value of vaginal hysterectomy as an elective operation in these cases is to gather the statistics after some years and compare them carefully with those obtained by Drs. Baker and Byrne and others who operate as they do.

DR. W. GILL WYLIE, of New York.—My remarks will not differ materially from those of Dr. Janvrin. I had some experience with what was practically high amputation when associated with Dr. Sims some years ago. I have at times used the cautery, but usually employed the zinc paste. I must say that some of my cases treated in that manner were very successful. In one instance the patient had no return of the disease after sixteen years, while other members of the family died of it. One woman, operated upon eleven years ago, the cervix being amputated high above the disease, remains well to-day, while two sisters and her mother have died of cancer.

I did not take kindly to hysterectomy at first, having become attached to high amputation, but about five years ago I became convinced that total removal could be practised without great risk, and then began to do it. Since then I have operated on twenty-five cases, only one death following the removal of the uterus. In that instance there proved to be chronic Bright's disease, an acute attack being lighted up by the ether. The post-mortem showed the ureters free, and that the kidney affection was

the sole cause of death. It seems to me now that vaginal hysterectomy cannot be classed among the very dangerous operations. It is not much more dangerous than high amputation performed as thoroughly as Drs. Baker and Byrne recommend.

In choosing between the two operations, the only argument which has been advanced worthy of consideration, it seems to me, is that in hysterectomy there is likelihood of not going far enough laterally through fear of involving the ureters. The only source of danger in going as far as one might desire in doing hysterectomy consists in the possibility of including the ureter in the ligature; for that reason I sometimes use zinc to extend the destruction laterally.

I am convinced that we must come to the conclusion that a radical operation is better than one by which a part of the uterus is allowed to remain. I would just as soon to-day take out a part of the uterus for cancer and leave the rest, as take out part of the breast and leave the rest, and *vice versa*. I think that the final result would be the same in both cases. General surgeons in removing the cancerous breast take great pains to remove the entire gland, and not only that, but they also remove the glands and tissues by which the disease is liable to extend. While it is true that the cancerous disease is more likely to return at the side of the cervix, yet it is certainly true also, that a return of the disease is favored by leaving a portion of the degenerated organ in which it made its first appearance. That fact seems to me so plain that, when taken into consideration with the slight danger of the operation, the choice must in time be that of radical removal. Dr. Baker himself admits that opening the peritoneum adds very little, if any, real danger to the operation. Of course, a great deal depends on the skill and experience of the operator, but in the hands of the skilled I would always advocate the radical operation.

Again, one may think he can exclude disease of the body of the uterus, but in practice it is a very difficult thing to do. I have adopted a rule applicable to all cases, which I think has contributed much to my almost uniform success. It consists in always putting the patient under ether, cutting or scraping away all necrosed cancerous tissue; and in that way I do almost as

complete an operation as high amputation, before resorting to hysterectomy. That tissue is carefully examined under the microscope. By first removing all dead and septic material, the final operation is rendered much less likely to cause infection. The steps of the operation are, first, get rid of all septic material, so that there will be no infection from dead tissue; next, to tie the bloodvessels, then to cut away all the tissues it is intended to remove, and after having completed the operation as it is ordinarily understood, to trim the tissues as much as it is safe to do without involving the ureters or other important structures. Then replace fresh ligatures on the stump, which will prove almost a certain preventive of slipping and hemorrhage. Then pack a piece of gauze against the peritoneum and upper portion of the vagina, a second piece in the vagina, and a third piece in the vulva. The third piece should be changed daily and kept perfectly clean. The middle piece is changed if there is any odor; but the third piece is not touched for a week or ten days. Since adopting these simple procedures, I think I can do hysterectomy in suitable cases without much more risk than attends amputation of the cervix.

DR. HENRY T. BYFORD, of Chicago.—I have performed vaginal hysterectomy twenty-five times, with one death from delirium tremens. I scrape off the septic material beforehand. I have found three or four ounces of pus in the uterine cavity; have had the uterus break to pieces and let septic matter out while operating, yet the patients got well. I think the operation is about as safe as high amputation. I cannot see why, when you do hysterectomy, you cannot tie fully as far out and secure as wide destruction of tissue as when you use the cautery in high amputation. Therefore, it seems to me, the assertion that high amputation is safer, because enabling one to remove more tissue in a particular location than he could do during hysterectomy, is entirely unfounded.

DR. THOMAS ADDIS EMMET, of New York.—In a large number of cases, when the surgeon is first consulted, very little more can be done than to prolong life somewhat by operative procedure. Where a patient can be seen early enough, and the disease is confined chiefly to the cervix, there is no doubt in my

mind that the high amputation has advantages over removing the uterus itself. Entire extirpation of the uterus does not appeal to me at all as an advisable operation except in some cases of sarcoma. For the ordinary forms of malignant disease, as epithelioma confined to the cervix, I am sure I can do as radical an operation by the high operation as by any other procedure. I learned to do this operation first in a primitive manner when assisting Dr. Sims over thirty years ago—when it consisted in taking out a cone-shaped piece of the uterus, beginning at the vaginal junction, then using the cautery or caustic to destroy as much tissue as possible, leaving the surface to heal by granulation. Dr. Sims operated with the uterus *in situ*; the hemorrhage was excessive, and the operation was not a satisfactory one. I had so much trouble in looking after his cases from secondary hemorrhage, occurring on the third or fourth day or night after the operation, and from the early return of the disease, that I was led to pursue a different course. I believe that I was the first operator to do the high operation in a radical manner. I pulled the uterus down to the vaginal outlet by gentle traction, and dissected it loose from the vaginal junction until I came nearly up to the peritoneum, and had separated the uterus, if necessary, to the same extent from the bladder. I then began to excavate the uterine tissues in a cone-shaped mass. The traction made was sufficient to roll out the sides of the cavity, and as soon as an artery was divided it was at once caught up with a tenaculum. One portion after another of the uterine tissue can thus be removed until, if necessary, pretty much the whole uterus but the subperitoneal covering can be taken away.

The dragging down of the uterus in this operation, as in other operations about this organ, is a very important procedure, and should be understood; for, if it be done properly, the operation can be made almost a bloodless one. As we draw down the uterus to the vaginal outlet, the arteries are put sufficiently on the stretch to lessen the amount of blood circulating, and consequently there will be less bleeding. It has to be done by steady traction, and not by jerking, for some vessel may be torn; while it is not to be attempted if the uterus be fixed from infiltration, nor will any operative procedure for removing the uterus be

advisable under these circumstances. It is necessary that a divided artery in erectile tissue should be secured at once with a tenaculum and traction made until the coats have had time to retract, or the loss of blood will be much greater in a given time than would be the case if it were situated elsewhere. With a fair experience in plastic surgery, I do not take kindly to the use of caustics or the cautery when I can do the work as thoroughly with the scissors. I can remove as much of the uterus in this manner as can be done by the cautery or otherwise. I have not the histories of my cases to enable me to compare the results with those obtained by the cautery, but my conviction is that they have been as satisfactory in regard to the return of the disease, while it seems to me more surgical if one can get equally well into healthy tissue; to close in the surfaces to heal by the first intention, and not by granulation, we must obtain tissues of a higher grade of vitality. But this may not be an important point, and therefore let the operator use the cautery if he thinks best; but I am satisfied that with the scissors I can remove as much tissue with safety, short of puncturing the peritoneum, as can be done by any other means.

I referred yesterday indirectly to the value of well-directed traction when speaking of post-partum hemorrhage, but evidently was not understood. It struck me that it was better to invert the uterus than to resort to Porro's operation, as was suggested during the discussion. By inverting the organ you can certainly bring traction upon the vessels and control the hemorrhage. I have adopted this course in a case of fibroid tumor, where the hemorrhage was great, by inverting the uterus, and after the tumor had been removed the inversion was reduced. Dr. Howard, now present, witnessed such an operation done by me several years ago in the Woman's Hospital.

I have nothing to say against removal of the whole uterus where it is necessary. Where the disease has extended to the vaginal tissue on either one side or the other, in my experience it is usually more advanced in the cul-de-sac back of the uterus. When this is the case, we can dissect off the uterus up to the peritoneum, and then take away all the diseased tissue. I have taken out half of the cul-de-sac, and then have removed what I

could of the uterus by the high method, bringing the parts together afterward with silver sutures, and getting union by first intention throughout.

The longest case of exemption in my experience, so far as I know, was in a patient who went fourteen years, and then was lost sight of. Four and five years have been quite common. As far as my observation has gone in cases in which the whole uterus has been removed the results have not been so good.

DR. BAKER (closing the discussion).—I thank the Fellows very much for the interest which they have shown in the paper, and not to take up too much of your time I shall make my reply to the discussion brief. In just such cases as Dr. Janvrin has described as appropriate for hysterectomy—cases in which the disease is confined to the cervix and the lining membrane of the body—we would, I think, gain most by high amputation and subsequent cauterization. In such cases Dr. Byrne and I have obtained the best results. So far as comparison of the statistics of hysterectomy and high amputation is concerned, the advantage is in favor of high amputation. I am quite in accord with Dr. Janvrin when he says that where the corpus uteri is deeply involved, together with the cervix, the proper operation is vaginal hysterectomy. But how can you tell in advance? When we begin to cut out the cone-shaped piece from the corpus uteri, the appearance will inform us whether we have gone deeply enough at our first step. If, then, we find that the disease has involved the deeper structures of the uterine body, we may perform vaginal hysterectomy. Should the outer portion of the cut surface appear healthy, it is immediately to be charred with the cautery. The question of safety between the two operations is on the side of high amputation. At any rate, for the profession in general, I think it may be affirmed that high amputation is the safer procedure, however it may be with the expert in the practice of hysterectomy. As to my own experience with hysterectomy in those cases in which the disease primarily affected the body of the uterus, eight in number, all the patients recovered.

In reply to Dr. Wylie. He says he learned to do this operation—high amputation—with Dr. Sims. But Dr. Emmet has just told us that the operation which Dr. Sims did was very different



from that referred to in these cases. Dr. Sims made the base of the cone removed at the vaginal insertion, the apex being carried up to the os internum, thus removing a portion of the supra-vaginal cervix. But high amputation, as it is understood in the operation I have described and as Dr. Emmet has stated, includes dissecting out the supra-vaginal cervix, drawing down and separating the bladder in front and the peritoneum behind up to the level of the os internum; then cutting out a cone-shaped piece from the body of the uterus, the base of which is at the *os internum*, and the apex at the *fundus of the uterus*. By this operation much more of the uterus is removed than by the Sims method, and this is a very important part when we remember that cancer is likely to affect the whole of the supra-vaginal cervix, and then go on to involve the cellular tissue around the cervix and the vagina before it implicates the body.

I think with Dr. Byrne that it is the subsequent cauterization which insures the success of the operation, and I believe that those who favor so strongly vaginal hysterectomy will obtain greater success with the operation if they will devise some safe way of applying the cautery to the denuded surface.

I agree fully with Dr. Emmet that he can remove almost the entire uterus by high amputation; but who can tell in advance whether we have not on the cut surface left just a border line of the disease? In that case the cautery would meet an all-important indication.

## THE BEST POSTURE IN THE DIFFERENT STAGES OF NORMAL LABOR.

BY H. J. GARRIGUES, M.D.,  
*New York.*

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It is now about ten years since I was appointed Visiting Obstetric Surgeon to the New York Maternity Hospital. In all that time I have not had a single assistant who would think of delivering a woman in any other position than stretched out horizontally on her back, with a low pillow under the head, with flexed legs, and grasping two pins which are found, one on either side of the so-called pony bed. I received myself my first obstetric instruction in a lying-in hospital in which the women were delivered in about the same fashion, with the exception that a common bed was used, but I had scarcely begun the practice of midwifery independently before I satisfied myself of the advantages of a partial adoption of the English position; and when I came to the Maternity Hospital it puzzled me to see the unanimous use of the recumbent position on the back among my colleagues and my assistants in a part of the country that certainly must have received its earlier obstetric tuition from English sources. It is evident that a change in the teaching of obstetric authors and in practice among obstetricians has taken place. While King speaks of the "customary American position upon the back,"<sup>1</sup> and Engelmann mentions "the dorsal decubitus as practised upon the continent of

<sup>1</sup> A. F. A. King: Journ. Obst., April, 1889, p. 342.

Europe and in America,"<sup>1</sup> nearly all the older American authors teach to deliver the woman in labor in the left lateral posture. Thus Samuël Bard<sup>2</sup> says: "From the commencement of this stage of labor [the passage through the soft part of the parturient canal] a woman becomes disinclined and less able to move, and the delivery may be expected to be accomplished in a short time. The woman is now, therefore, to be laid on her bed, in a proper posture for delivery, *that is, on her left side*, etc. The patient is kept on the left side after the delivery of the child, and the placenta is removed in the same posture." William P. Dewees<sup>3</sup> says: "The woman will be placed for labor upon her left side." C. D. Meigs<sup>4</sup> states that it is the *almost universal custom* in this country and in England to direct the woman to lie upon her left side. D. F. Condie,<sup>5</sup> in his edition of Churchill, adds in a special note, "The position upon the left side, with the knees drawn up, is that *almost universally* directed by American accoucheurs." H. L. Hodge<sup>6</sup> speaks of "the English *and American* practice of placing the patient on the left side."

The change in New York is probably in a great measure due to the influence of Fordyce Barker, who stated in this Society in 1880 that he early gave up the position on the left side and allowed the patients to assume the position which their instincts desired,<sup>7</sup> and Isaac E. Taylor, both of whom had studied obstetrics in Paris, where the dorsal decubitus has been the one recommended from the time of the earliest obstetric teachers until the present day.

Finally, we will see what our three modern systematic

<sup>1</sup> George Engelmann : Gyn. Trans., 1880, vol. v. p. 176.

<sup>2</sup> Bard : A Compendium of the Theory and Practice of Midwifery, New York, 1807, p. 120.

<sup>3</sup> Dewees : A Compendious System of Midwifery, Philadelphia, 1835, p. 188.

<sup>4</sup> Meigs : Obstetrics, the Science and the Art. Philadelphia, 1849, p. 285.

<sup>5</sup> Condie : American edition of T. Churchill's Theory and Practice of Midwifery. Philadelphia, 1855.

<sup>6</sup> Hodge : Principles and Practice of Obstetrics, Philadelphia, 1864, p. 188.

<sup>7</sup> Barker : Gyn. Trans., 1880, vol. v. p. 273.

authors, living in three different States, say on the subject. Glisan,<sup>1</sup> of Oregon, says that the English position is the more frequently used in the United States, except in cases of turning or operative interference, when the dorsal decubitus is preferred. Lusk, of New York,<sup>2</sup> says that during the second stage the patient's posture should be left to her own volition. The left lateral position, affected by English accoucheurs, is very convenient at the time of delivery, especially when there is occasion to support the perineum, and where, owing to the flatness of the nates, the vulva is scarcely raised in the dorsal posture above the level of the bedding. Parvin, of Pennsylvania,<sup>3</sup> finally, in speaking of prevention of perineal laceration, recommends to place the patient on her side, preferably the left.

Some works on obstetrics do not even mention the posture of the woman in normal labor, others devote only a line or two to it, and still it must have struck every observant obstetrician that posture has a decided effect in labor for good or for evil. It is, therefore, a question well worth the serious attention of obstetric teachers and practitioners, and there has also been written a good deal about it in special treatises, journal articles, and papers, two of the members of this Society, Drs. Engelmann and King, being among the chief contributors to this literature.

The question arises, How shall we find out which is the best posture for a woman in labor?

Nägele sought to discover the natural position in labor by secretly observing the movements of an inexperienced girl who was left alone, while in pains, in a room furnished with a bed, a chair, a sofa, and an obstetric chair. The girl took

<sup>1</sup> Glisan: A Text-book of Modern Midwifery, Philadelphia, 1881, p. 387.

<sup>2</sup> W. T. Lusk: The Science and Art of Midwifery, 2d edition, New York, 1885.

<sup>3</sup> T. Parvin. Science and Art of Obstetrics. 2d edition. Philadelphia, 1890, p. 431.

all possible positions and was finally delivered tossing about on the bed.

It seems to me such a conduct on the part of the learned obstetrician was revoltingly cruel, and if an accident had happened to mother or child, he might have been held criminally responsible. Besides that, the information obtained is of very little value, for who can draw any conclusion from a single case?

In this respect the researches of Schütz and Cohen von Bären on the way in which girls had behaved who clandestinely gave birth to children are much more important, since they embrace no less than 150 cases.<sup>1</sup> But since these women took the most different postures under the impulse of their violent sufferings, no conclusion can be drawn from these cases either, as to the best way of placing a woman in labor.

Some authors, foremost among which are Ploss<sup>2</sup> and Engelmann,<sup>3</sup> have collected a highly interesting material by ascertaining how labor has been conducted during the historical development of mankind, and how it is yet conducted in primitive peoples and savage tribes.

By these researches a means was sought of ascertaining the position taken during labor by persons following their natural instinct independently of the doctrines developed in scientific schools. But interesting as these investigations are, I do not think they teach us much in regard to the question proposed. To begin with, like in the cases of clandestine births, the greatest diversity in posture is found among these uncultivated people. Secondly, the fact that a certain posture is taken by the women of a primitive people is no proof that this posture is due to instinct; and the great diversity ob-

<sup>1</sup> Gyn. Trans., 1880, vol. v., 176.

<sup>2</sup> H. H. Ploss: Ueber die Lage und Stellung der Frau während der Geburt bei verschiedenen Völkern: Leipzig, 1872. "Historisch-ethnographische Notizen zur Behandlung der Nachgeburtsperiode," Festschrift zu Credé's Jubiläum.

<sup>3</sup> George Engelmann: Labor among Primitive Peoples. 2d edition. St. Louis, 1883.

served in different peoples, on the contrary, goes far to prove that these postures are not a result of an instinct. Among these barbarian peoples there are wise women and trusted medicine men who lay down the rule for the conduct of labor as for the treatment of disease. We have to deal with customs and traditions which are just as well handed down from generation to generation, only in a more imperfect form, as the scientific teaching of professors in universities and medical colleges.

Furthermore, the mere fact that savages do a certain thing in a certain way is no proof that it is the best way or even a good way. There is no more reason why we should learn of them how to confine our women than how to cook our food, kill our enemy, or transport ourselves from one place to another.

Instinctively the woman in labor will do two things. She will try to avoid pain, and if that is impossible, she will try to get through it in as short a time as possible. She will therefore not use her abdominal muscles during a pain in the earlier stages of labor, but when the child is distending the vulva and her whole body shakes with pain—the *dolores conquassantes* of the older writers—she will use every means of expelling the object the pressure of which causes the pain, but in so doing she will often injure herself.

Entirely different is the proceeding of science. In the course of ages man has studied the anatomical conformation of the parturient canal; he has watched the physiological mechanism of labor; he has noticed that certain acts are beneficial during a certain stage of labor, but dangerous or harmful during others; he has seen that the soft parts are liable to be torn; he has found that such tears lead to certain deformities or diseases months or years after their occurrence; he has ascertained that acute disease and death in childbed often are due to the entrance of minute beings into the genitals, and that some lives are endangered or lost by loss of blood. On the other hand he has invented means of

subduing or annihilating the pangs of labor and of ascertaining the condition of the child while it is yet hidden in its mother's womb.

Thus armed with the accumulated experience and skill of ages, he is in a position where he can give his suffering fellow-being advice worth listening to, and conduct her labor in a way infinitely more beneficial to her than if she were only reduced to her own personal instinct and natural promptings.

In deciding the posture a woman should occupy during labor, we have to take into consideration the woman's comfort and safety, the child's safety, and the accoucheur's comfort, which again contributes to the safety of the two others.

As to the stage of dilatation of the os there reigns considerable unanimity among obstetricians. All agree that during this stage the woman should be encouraged to stand erect, sit on a chair, or walk about, because it abridges the time she has to lie down and diverts her mind from her sufferings and her fears, and that she should not bear down during the pains, because it only exhausts her strength without furthering the parturient process.

In this connection I will only remark, that it is not correct as sometimes stated, that the erect position makes the child press on the os. This would be better obtained in the dorsal decubitus. When the woman stands erect the heavy, gravid womb tips considerably forward. But women obviate this by pressing, in the erect position, the abdomen against the person or the object they lean against.

During the first half of the stage of expulsion, while the child is passing through the bony part of the parturient canal, the semi-recumbent position on the back is the best. The body should be raised—for instance, by the old French expedient of inserting an inverted chair covered with pillows behind it—so as to form an angle of about  $35^{\circ}$  with the couch in the interval of pains, and during the pains she should pull herself forward so as to make the angle about  $45^{\circ}$  or still larger. To this end she should seize a rope wound with a towel or a

sheet fastened to the foot end of the bed. At the same time she should bend and spread her knees and stem the feet against a footstool or other suitable object interposed between them and the footboard; instead of which assistants may press against her knees and shins. By filling her lungs, closing her glottis, setting her teeth, and pulling with her hands, she offers a solid support for all the muscles concerned in expiration. By bending forward and drawing the knees up she diminishes the size of the abdominal cavity and allows the abdominal muscles to contract to much greater advantage than when her body is stretched out.

Schultze<sup>1</sup> has shown that by bending forward the entrance of the head into the superior strait is facilitated, the pressure being carried away from the symphysis pubis. During the passage considerable pressure can be exercised which coöperates with the contractions of the uterus. The weight of the child is also being utilized as an expulsive force.

In this position the stethoscope can easily be applied to the abdomen and thus information is obtained about the foetal heart which may afford most important indications for treatment.

If the labor-pains are insufficient and it is deemed advisable to help to the expulsion by manual pressure on the fundus uteri, the necessary manipulations are done better in the semi-recumbent position than in any other.

The bending forward during labor-pains and the drawing up of the knees should, however, be used with moderation, for if the body is doubled up too much the patient wastes some of her exertion, as even a man can feel if he will pay attention to the effect of pressure in a more or less bent position during the act of expelling a hard and large-sized fecal mass through the anus. If the patient bends too much the erector spinæ and other muscles of the back which coöperate

<sup>1</sup> B. S. Schultze: *Jenaische Zeitschrift für Medicin und Naturwissenschaft*, Leipzig, 1867, iii. p. 272.



with the abdominal muscles in expelling the contents of the abdomen, are placed at a disadvantage.

During this stage of parturition the semi-recumbent posture is preferable both to the horizontal position on the back and the left lateral. In the horizontal position on the back the parturient woman wastes much of her strength; in the left lateral she loses the advantage of gravity and it is not possible to use the stethoscope.

The mere fact that this stage is abbreviated in the semi-recumbent and prolonged in the lateral posture furnishes, however, the thoughtful accoucheur the means of preferring one or the other in accordance with the rapid or slow progress of parturition.

Furthermore, experience has shown that the mere change from one position to another often renews the flagging labor-pains, and expedites the passage of the child through the bony canal.

During the second part of the stage of expulsion, when the vulva begins to open, an entirely different course should be followed. Now the woman should be turned over on her left side, lying horizontally on the bed, with the thighs forming about a right angle with the body and the legs another right angle with the thighs. The lumbar part of the vertebral column should be stretched out. All supports should be taken away from hands and feet, and the woman should be given chloroform during the pains, pushing the administration of the drug to complete anæsthesia during the passage of the child through the vulva.

In this stage the left dorsal decubitus seems to me to possess great advantages over all others. The os coccygis, which in the recumbent, and still more in the semi-recumbent posture, is liable to be pressed against the couch, has entirely free scope to extend backward. The parturient parts become easily accessible and can be made visible, while the rest of the body is covered up, whereby exposure to cold is avoided and due attention is paid to propriety. The pudicity of the

parturient woman is spared by the mere fact that she does not see the accoucheur, and, as it were, hides herself. The voluntary and often involuntary use of abdominal pressure is limited. But, most of all, the lateral decubitus is useful, because in this posture the fundus uteri sinks down on the bed, so that gravitation works in almost opposite direction to the uterine contraction. Thus the perineum has not to carry the weight of the fœtus in addition to the pressure exercised on it by the fœtus being pushed against it by the contraction of the womb and the voluntary muscles; and beside being thus in itself a safeguard for the perineum, the left lateral posture facilitates other measures to be taken for its protection. By means of a rag wrung out of some antiseptic fluid, the head is easily directed forward so as to utilize all available space at the pubic arch. The head is kept back by direct pressure so as to prevent too sudden dilatation and consequent rupture of the vaginal and vulvar rings.<sup>1</sup> If, on the other hand, expulsion is too slow the head is easily delivered by enucleation.<sup>2</sup>

English authors recommend to place a pillow between the knees or direct the nurse to lift the right leg up. I do neither. The nurse is needed for giving the chloroform, and I think the lateral stretching of the perineum superfluous or even injurious.

The reason why the lumbar region should be stretched is that by so doing the exit of the head at the inferior strait is facilitated, as found by actual measurement by Schultze. The other points aim all at the preservation of the soft parts.

As soon as the child is born, the mother should again be turned on her back, but now in a horizontal position, at most with a pillow under her head. By covering the right limb with a special blanket only the genitals and the lower abdomen

<sup>1</sup> See my paper on "So-called Lacerations of the Perineum," in the *Medical News*, April 25, 1891, vol. lviii. p. 455.

<sup>2</sup> This method which often is called Ritgen's, was already taught by Smellie in the middle of the eighteenth century.

need be exposed. This position is much better adapted to the Credé method of removing the placenta, which I always use. Pressure can be exercised with all the ten fingers, and the accoucheur can stand or even sit in a comfortable position without bending forward. This position is likewise kept up after the expulsion of the placenta in order to insure good uterine contraction and prevent hemorrhage.

To resume, my way of delivering is, before the waters break, to let the patient walk, sit, and stand; during the passage through the pelvis to place her in semi-recumbent posture; during the passage through the soft part of the parturient canal, to keep her on the left side; and during and for half an hour after the expulsion of the placenta to let her lie horizontally on her back with low head and semi-flexed legs.

Besides the two regular postures on the back and on the side, the kneeling-squatting position is occasionally recommended by modern accoucheurs. It is often used by uncivilized or half-civilized peoples. It was recommended in 1870, in a pamphlet by Mr. Von Ludwig,<sup>1</sup> a layman; and while Fränkel,<sup>2</sup> after having tried it in Spiegelberg's clinic, reported very unfavorably on it, Alt,<sup>3</sup> Schroeder's assistant, came to the opposite conclusion, and Schroeder<sup>4</sup> speaks rather favorably of it. King<sup>5</sup> has found that by bending the legs of cadavers backward, the heels just reached the sacro-sciatic foramina and could be made to turn the head in the pelvis.

I have no personal experience with this posture, but see rather much that is against it. It is fatiguing for the woman; it predisposes to hemorrhage and fainting; it makes the use of the stethoscope very difficult; it nearly excludes any kind of protection of the perineum, and it deprives the patient of the blessing of anæsthetics. Still, in cases of lingering prog-

<sup>1</sup> Von Ludwig: Warum lässt man die Frauen in der Rückenlage gebären.

<sup>2</sup> E. Fränkel: Berliner klinische Wochenschrift, 10. Juli, 1871, No. 28.

<sup>3</sup> Alt: Berliner klinische Wochenschrift, 1872, No. 3, p. 28.

<sup>4</sup> C. Schroeder: Lehrbuch der Geburtshülfe, 5te Auflage, Bonn, 1877, p. 206.

<sup>5</sup> A. F. A. King: American Journal of Obstetrics, May, 1887, vol. xxi. p. 514.

ress during the passage through the pelvis, it may be worth trying, like other exceptional positions, such as sitting on another's lap, leaning up against another in an erect posture, leaning forward over a table, and the genu-pectoral posture, which all have been and perhaps are yet in use.<sup>1</sup>

The consideration of posture in abnormal cases lies without the scope of this paper.

In normal cases I believe that a judicious combination of the dorsal and the lateral position offers the greatest advantages for the woman, the child, and the accoucheur.

### DISCUSSION.

DR. A. F. A. KING, of Washington.—The subject introduced by Dr. Garrigues is extremely interesting, and has engaged the attention of this Society on several occasions. Although it has been discussed from various standpoints, I do not think we are any nearer a conclusion than we were in the beginning, and I believe the difficulty arises from a deficient clearness in stating the question.

Dr. Garrigues endeavors to explain the "best posture in the different stages of *normal* labor." Here it becomes necessary to define what "normal labor" is. As I understand it, a normal labor is one in which the "passage" (the parturient canal), the "passenger" (the child), and the "power"<sup>2</sup> (contraction of the uterine and abdominal walls) are nicely adjusted to each other.

In such a case there would be no extraordinary pain requiring chloroform, no such prolongation of the labor as to produce exhaustion, no necessity for instrumental aid, no danger of rupture of the perineum—in fact, nothing for the obstetrician to do. But we do not meet with these cases frequently in practice—cer-

<sup>1</sup> J. Astruc: Elements of Midwifery, translated by S. Ryley, London, 1766, p. 32. J. L. Baudelocque: Principes sur l'Art des Accouchements, Paris, 1821, p. 199. Samuel Ashwell: On Parturition, London, 1834, p. 231.

<sup>2</sup> These terms are borrowed from Prof. A. R. Simpson, of Edinburgh. He called them the three P's. See Proceedings International Congress, London, 1881.

tainly not in the higher walks of civilized life. Something has occurred to disturb the adjustment between passage, passenger, and power. The suggestions of Dr. Garrigues apply to these disturbed cases. I think, therefore, the title of his paper should read, *The Different Postures Proper for the Various Abnormal Conditions Met with in Practice*. He gives a posture desirable when the perineum is about to rupture—a mishap which shows some abnormal condition, a too large head, or too small passage, etc. Such cases cannot be called normal or natural.

If we really wish to learn what is the natural position for woman in natural labor, we must take her away from beds, sofas, chairs, and other artificial inventions, and place around her the natural furniture of field and forest and the ground—the ground on which she stands and the trees growing upon it, to which she may hold. Under such circumstances, in normal cases, we would most probably find her squatting, kneeling, sitting, or standing (rather than reclining upon her left side), and grasping some sapling with her hands. But we cannot adopt these methods in the practice of to-day; we must deal with woman as we find her, and cope with the various mal-adjustments between passage, passenger, and power. Many of our women, from indolence and the use of corsets, have atrophy and deformity of the abdominal muscles; thus the *power* is abnormal, and is rendered still more so by lack of motor power in the spinal cord and brain. From various circumstances inseparable from our highly wrought civilization the heads of our children have increased in size without corresponding enlargement of the parturient passage. For meeting these emergencies the methods suggested by Dr. Garrigues are probably both useful and convenient, but we cannot say they are proper for normal cases.

There are several postures, to which I have before called attention, which influence the mechanism of labor and even change the presentation. Thus, the squatting or kneeling position will sometimes change a cross-presentation into a normal one. It is the pressure of the *woman's thighs upon her own abdomen*, when thus kneeling or squatting, that turns the child, and this postural method of turning, I hope, will be tested in practice; it is Nature's method and does away with all internal manipulation

by the obstetrician. (See my former paper, "The Natural Rectification of Malpresentations and Its Imitation by Art," *Am. Journ. Obstet.*, vol. xxii., No. 6, 1889.) Since the publication of this paper I have had but one case of transverse presentation. It was a primipara, the elbow presented. I sent for my friend, Dr. Fry, to assist me, but before his arrival I made the woman kneel at the foot of the bed, with her arms resting on the shoulders of another person. After three pains, she exclaimed, "The child is coming out," and it was, *by the breech*. It was delivered in fifteen minutes. Another physician, one of my former pupils, has had a somewhat similar case, of which he has promised to send me particulars.

Several years ago I called attention to the fact that rotation of the child's head in the pelvic cavity could be expedited by *external digital pressure* over the great sciatic foramen; and I also explained that when a woman kneels so that her nates rest against her heels, the heel will touch the buttock at the site of the sciatic notch. This again probably illustrates one of Nature's methods of promoting the mechanism of labor, and in our future studies of posture during delivery, the influence upon the mechanism should be taken into consideration. There is much more to be said, but my "five minutes" have expired.

DR. WARREN SAWYER, of Chicago.—Dr. King very properly said that if we wish to see the position of a normal woman in normal labor she must be abandoned to the fields. I had the opportunity a number of years ago of witnessing a labor in a child of Nature—a Piute Indian. The child was born while the mother stood upright.

# THE INFLUENCE OF IMPERFECT DEVELOPMENT OF THE GENERATIVE ORGANS AS A CAUSE OF DISEASE.

BY W. GILL WYLIE, M.D.,  
*New York.*

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THE natural tendency in studying the nature of disease is to attribute the cause of it to some immediate exciting influence, such as a fall, exposure to cold, etc. Nowhere in medical literature is this natural tendency more marked than in writings on diseases of women.

The more remote and often the real cause is entirely overlooked, so that the result has been to establish methods of treatment based upon false ideas of the real cause of disease, and has not only led to much useless treatment, but has been a stumbling-block to scientific progress.

Take, for instance, catarrhal endometritis resulting in dysmenorrhœa, sterility, etc. It was until recently almost universally attributed to falls causing anteflexion or to exposure to cold at menstruation. This view of the etiology naturally led to the use of pessaries and other vain efforts to straighten the uterus, to useless and often harmful rest in bed during menstruation, to the housing of young girls, and limiting the normal amount of physical exercise, etc. The very important fact that imperfect development of the uterus made that organ the easy prey of catarrhal disease was, and is still, rarely considered in deciding upon a method of treating dysmenorrhœa.

Many years ago I recognized the great importance of im-

perfect development in causing uterine disease. In a paper published in the *American Journal of Obstetrics*, vol. xv., No. 1, January, 1882, "Observations on Lacerations of the Cervix Uteri," speaking of the etiology, I wrote as follows: "As a rule a disease or abnormal condition of the cervix will prevent impregnation, but there are many exceptions. Among civilized people, where the law of 'survival of the fittest' is interfered with, many girls with inherited feeble organizations reach and pass puberty with unfinished, imperfectly developed genital organs. When one of these becomes pregnant by a large and vigorous man, the cervix will, in all probability, be incapable of dilating sufficiently to allow the child to pass without tearing. Then there are others, who from sickness, bad hygienic conditions, or from other circumstances, are compelled to use up the force that should go to develop the genitals, reach maturity with imperfectly developed organs. Among this class very few escape having subacute catarrhal disease of the throat, and many of them have a similar disease of the mucous membrane lining the cervix uteri; its follicles and glands are diseased, and in some cases the underlying tissues are hardened and flexed. Of course many of these cases reach a point where impregnation will not take place; but in others, later, the general health improves and the local disease subsides sufficiently to admit of impregnation, yet not before serious structural changes have taken place in the cervix. Even in cases where the disease is present, just after a free menstrual flow, the secretions may be for a time nearly normal and impregnation will take place, and the mucous lining of the cervix continue diseased throughout the period of pregnancy. Such cases are very sure to tear during labor, and even when the laceration is comparatively slight, may be very troublesome."

In a paper on "Anteflexion of the Uterus: its Etiology and Associated Pathological Conditions," printed in the *American Journal of Obstetrics*, September, 1883, I again brought out more fully the fact that imperfect development



was the real cause of the pathological conditions usually termed antelexion of the uterus, from which I quote the following: "Congenital influences which prevent perfect development of the organs of generation greatly predispose to antelexion of the uterus, and undoubtedly have much to do with the premature atrophy and degeneration so frequently associated with it. In the working of the law of the 'survival of the fittest,' the organs of generation play an important rôle. It is a merciful law which prematurely atrophies the generative organs of the degenerate, and thus puts an end to their reproduction in offspring. The prevalence in a community of congenitally antelexed uteri, or to speak more accurately, imperfectly developed antelexed uteri, may be one of the first indications of race degeneration. The functions of the generative organs are not a necessity in the physical organization of the individual. They do not bear the same relations to the existence of the individual as do the heart, liver, stomach, kidneys, etc. Life can go on in the individual without them. They are the last to develop, therefore they are most likely to suffer from imperfect development and degeneration when the supply of vitality is below par. Their full and proper development would seem to depend upon a surplus of vitality."

Again, in my paper on "Menstruation and its Disorders," in the *System of Gynecology by American Authors*, I brought out fully my views on the influence of imperfect development as a cause of dysmenorrhœa, etc. I have made reference to these old papers and quoted from them to explain why I have not referred to the writings of others on this subject; for when I first published my views on imperfect development little or nothing had been written on the subject so far as it related to diseases of women. I am convinced of its importance and am satisfied that when it is generally appreciated by the profession it will greatly influence methods of preventing and treating diseases of women.

It is a well-known fact that in animal life the higher the

animal organization, the less prolific are the generative organs, and among races of men the higher the state of civilization, the fewer children are born; and again, that in the same community the better class and more highly developed intellectually have fewer children than the poorer class who use their muscles rather than their brains to make a living. In other words, the higher the scale of development intellectually, the more suppressed are the generative organs. Again, it is a well-known fact that among the poor, where relatively more children are born, a larger number of the children die under five years, for the poor cannot give them the same care and attention as is devoted to the children of the rich or more intelligent—that is, that the children of the rich and more intelligent who are feeble and sickly are more likely to reach puberty than the sick and weakly among the poor, for among the poor the law of “survival of the fittest” is not so much interfered with as it is among the rich and more intelligent. Therefore, we would expect to find, relatively speaking, more cases of uterine disease among the children of the rich than the poor, and more women with uterine disease among the race or people most developed intellectually.

It has been claimed that here in America we have more uterine disease, relatively speaking, than exists in Europe. If the mass of people in the United States are more developed mentally and further advanced in our modern civilization, then we would be certain to have more uterine disease. Aside, though, from these more general influences of race development and the natural tendency of modern mental and moral civilizing influences to suppress the generative organs, there is a very much more important influence at work in causing uterine disease, and that is the general tendency to restrict the *physical* development of our females by limiting their out-of-door life and exercise after they reach ten or eleven years of age, and the marked modern tendency to force mental development, especially of women just at the time when they are changing from girls to women. There is very

little doubt but that in the United States this practice is more marked than in Europe, and, in my opinion, is an important cause of many of those troubles which we call diseases of women.

It is a fact that the generative organs are not essential to the life of the individual, and that they are the last to develop; that they remain practically dormant from early childhood until the girl reaches the age of eleven or twelve, and that between the ages of eleven and sixteen they develop, and make a large demand on the system.

It is a recognized fact that our domestic animals will not stand any continuous strain at even ordinary work during development or before development without serious and permanent injury to the form and strength and usefulness of the animal. It has lately been pretty clearly demonstrated in training trotting horses that they will acquire speed at two years and make a gain during the third year; but during the fourth year they cannot be trained to do better than at three, while after they are fully developed they again can be further developed so far as speed is concerned.

From a twenty years' close study of the generative organs of women I am satisfied that to be sure of full development a girl must have a *surplus* of physical and nerve force during the period of development; that, if this force is closely used up by especially mental and emotional work or strain, the generative organs will fail to develop sufficiently to perform their functions normally—that is, if a girl is pushed at school, or her force is used up by constant contact with older intellectual people from the age of ten to fifteen, that she is almost certain to have a leucorrhœal discharge, irregular and painful menstruation, etc., and when examined locally an infantile, anteflexed uterus will be found, with such a disease of the glands and follicles about the cervix as to cause a semi-raw state which we call granular erosion and the older men treated as ulceration.

Bad hygienic surroundings, or a serious illness, or more

especially anything which brings about an anæmic and weak condition during the period of development, is pretty sure to result in an imperfectly formed uterus, dysmenorrhœa, sterility, etc.

I have also found that a young woman may appear to be in good health and seem well developed, yet she may have an imperfectly developed uterus. As a rule, leucorrhœa is one of the first local symptoms, and usually dysmenorrhœa soon develops; but not infrequently a patient may come complaining only of a dragging feeling about the pelvis or a pain on the left side, usually with marked constipation, and often with symptoms of fissure-in-ano or hemorrhoids, and on examination a well-marked case of granular erosion of the cervix will be found, the usual dysmenorrhœa being absent. Sometimes the only indications of imperfect development and disease of the glands of the cervix is pain on the left side and an unaccountable nervousness, with more or less mental depression or hysteria as the woman grows older. If the case is not treated, menstruation soon becomes irregular and later profuse, the latter symptom being due to the constant irritation resulting in congestion and abnormal vascularity, and finally to the development of what we call fungous granulations in the endometrium above the os internus. Typical cases of imperfect development are to be found among the students of our normal schools, for to graduate in a normal school usually implies severe mental work just when development is taking place.

The trouble caused by imperfect development does not stop at causing dysmenorrhœa and leucorrhœa. Unless marriage takes place in early life, the abnormal changes gradually induced by the uterine catarrhal endometritis is pretty certain to result in sterility. Early marriages undoubtedly tend to stimulate development of the generative organs; but suppose pregnancy does occur in an imperfectly developed uterus, where the os uteri is not only imperfectly developed, but rendered hard and incapable of distending sufficiently to

allow the head of the child to pass without tearing the cervix? The tissue being filled with more or less diseased glands and follicles, fails on this account to heal, and the result is that existing disease is aggravated, involution is delayed, the uterus remains soft, the ligaments relaxed, and produce the many cases of so-called displacement, etc. Besides, the existing catarrhal disease and feeble condition of the tissues make sepsis more likely to follow labor and abortions. Excluding new growths and acute sepsis, the result of want of cleanliness when making local applications after labor and abortions, this condition of imperfect development is the real cause of most of the local conditions from which women suffer. The condition of imperfect development may extend to the ovaries, and result in imperfect or abnormal ovulation, and result in sterility or reflex disease of the nervous system. Then this weak condition of the glands and cells may bring about conditions favorable to the development of new growths, such as fibromata, cancer, etc.

If my views are correct, then much can be done not only toward securing more effective means of curing, but of preventing diseases of women. The great importance of keeping children in good general health is very well understood, and much has been written on the importance of rest during menstruation, etc.; in fact, too much stress has been put on rest—physical rest, at any rate—but the very important fact has been overlooked that during the period of development, from ten or eleven to fifteen or sixteen, a girl must not only have good health and strength, but this health and strength must not be used up in mental or social development. If it is, the generative organs are almost sure to suffer by failing to develop.

Rest during menstruation may lessen the pain, but if it shuts up the girl and deprives her of out-of-door exercise, it does more harm than good, often being a cause in bringing about irregular action of the bowels, constipation, and in some cases tending to bring about abnormal conditions and

harmful habits which would not have developed had the young woman been playing out of doors.

The very common, and, until to-day, the supposed scientific idea that all of woman's ills come from displacement, falls, over-physical exertion, etc., should be replaced by a broader view. First, keep the general health good, the bowels regular, and during the period of active development let healthful play out of doors and pleasing mental occupation take the place of an in-door life, forced cramming, and stimulating contact with older people. Recognizing the fact that if a girl has brains to develop, they can best be developed after her generative organs have grown, that to develop the brain and have them so-called accomplished at the expense of the generative organs, is to give them the worst possible preparation for a happy life or future. I have often been asked, How can you bring up girls in such a way as to fully develop them, with all our customs and habits of others about you to contend with? With my own children, we kept them from contact with older people, and started them at school when over eight years old. Recognizing the fact that those expecting to live in the world should grow up in contact with the best of it, and that a private tutor rendered education somewhat abnormal, we decided to send them to school; but as the schools pushed children along too fast, we have sent our children for a year, and the next year had them go over the same course. Thus, we have made our girls during development take just twice the time to learn as other children. So far it has worked very well.

The importance of recognizing the influence of imperfect development on the treatment of diseases of women is very great. For instance, suppose we treat a case of dysmenorrhœa and sterility as being caused by ante flexion, when we straighten the uterus our work is done. But suppose we look upon the small uterus, with its semi-raw os and contracted canal, as being due to imperfect development, our aim would be to cure the local disease of the glands and follicles, and

then stimulate the uterus to development, and we would recognize the fact that unless we succeeded in keeping the patient's general health good, and in other ways stimulate healthy development, it would be only a question of time for the abnormal conditions to return. Then, when pregnancy takes place, to examine the case some time before labor, and, if indicated, bring on premature labor to prevent extreme lacerations; and, after labor, not to wait for retroversion, subinvolution, etc., to become chronic before giving treatment, but ten days after labor begin and make stimulating applications, not merely to sustain the uterus up in the pelvis out of the current of the rectum, and prevent its being forced down in the vagina by each movement of the bowels, but to stimulate an active circulation and rapid contraction and involution, not only of the uterus, but of the vagina, ligaments, and all the bloodvessels that have been enlarged and stretched by pregnancy and the labor.

Beginning ten days after labor, and making applications to the vagina twice a week of a firm cotton pledget rolled to the size of about one and a half by two and a half to three inches long, well saturated with a 10 per cent. solution of boro-glyceride (not glycerite, a mere mixture of boric acid and glycerin, but boro-glyceride, a fixed compound having marked antiseptic properties), we can prevent subinvolution, displacements, etc. The patient should be placed in Sims's posture, and the uterus pushed up in position, and one end of the cotton pledget placed in the cul-de-sac, the other being pressed by the perineum up under the pubic bone, thus filling the vagina in such a way that the uterus cannot be displaced downward or forward. Leave this in twenty-four to forty-eight hours, then remove and wash out the vagina with a solution of hot water and borax, then every third or fourth day repeat the application till involution is complete. This rarely fails to relieve all local symptoms, and enables the patient to be up and about after the first week or ten days after labor, and to go out riding the second or third week

with benefit in every respect. If this simple process was carried out after all labors—not that I claim that it is always needed, but in most cases among civilized people—it will with rare exceptions prevent further local trouble. Besides making the uterus an early prey to catarrhal disease, resulting in dysmenorrhœa, reflex mental disturbances, and often sterility, or lacerations, subinvolutions, displacements, etc., imperfect development, may cause serious symptoms at the menopause. Some ten years ago I discovered the fact that if a woman had severe *hot* flashes and reflex mental disturbances with the change of life, the endometrium would be found extremely painful to the slightest touch, and that by free divulsion, curetting, and drainage, and the application of pure carbolic acid, the symptoms would be soon entirely relieved. I soon discovered a very close similarity between the contracting and atrophying uterus of the old woman, and the small, hardened, and contracted uterus of the young woman suffering with dysmenorrhœa and hysteria. The influence of chronic uterine catarrh, frequently caused by imperfect development, may result in hyperæsthetic condition of the endometrium, prevent normal atrophic changes, and cause serious nervous reflex disturbances at the time of the menopause.

Much more might be written upon this important subject: The question as to how much race degeneration or general decay and degeneration of the human race may have in bringing about early atrophy and imperfect development of the generative organs. The influence of inter-marriage of near relatives in causing imperfect development of the uterus. The influence of the crossing by marriage between individuals of widely differing races. Certainly, the inter-marriage of individuals belonging to different races, where one race has much larger heads than others, might make lacerations of the cervix and perineum more common.

Then the very important question as to the influence imperfect development of other organs than the generative may have in causing diseases of these organs, etc.



## DISCUSSION.

DR. ARTHUR JOHNSTONE, of Cincinnati.—This paper is one which I have been extremely glad to hear. It confirms ideas which I expressed in a paper read about four years ago. In that paper I stated that if there were no infantile uteri and no abortions there would be no lacerated cervices. Since that time I have been further convinced, from careful clinical study, that the infantile uterus plays a greater rôle in the production of all forms of gynecological work than it has been given credit for. In that paper I divided the cases into two classes: those in which the cervix was at fault, and those in which the body was at fault. The cervical cases are those which I believe most commonly produce catarrhs of the body, as well as lacerations and accidents during labor. I am now confident that quite a large per cent. of cystic ovaries and diseased tubes are due to the infantile body. The mechanics of the condition are very simple. I had been gathering material for a paper on this subject, but Dr. Wylie has treated it so thoroughly that it would now seem hardly worth while. As to the causation of the infantile uterus, he has gone over that part of the subject fully.

I might give an illustrative case: A woman, aged about forty, had been a sufferer ever since she began to menstruate. On careful analysis of the cause I found that at eleven or twelve years of age, when she ought to have begun to menstruate (it was in a southern climate), she had an attack of flux which came near killing her. She was from eighteen months to two years getting over it. Her first menstruation was difficult, and she had dysmenorrhœa ever afterward. She has now an ovarian tumor, of which I have been cognizant for nine months. By studying cases from early years, I think we may get some reliable information as to the etiology of ovarian tumors. And that is not all; but the subject is too wide to permit of full discussion to-day.

## THE TECHNIQUE OF VAGINAL FIXATION OF THE STUMP IN ABDOMINAL HYSTERECTOMY.

BY HENRY T. BYFORD, M.D.,  
*Chicago.*

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ENCOURAGED by the success obtained in the treatment of the stump in abdominal hysterectomy by vaginal fixation (twenty cases with one death), I have thought it proper to again present the subject. All new methods suffer from the want of experience of the operators. During the past year I have added a little to my experience with it, and desire that anyone wishing to try it should have the advantage.

With regard to the first three steps as given in last year's communication, viz., ligaturing and severing the broad ligaments, separating the bladder from the uterus, and placing the elastic ligature, guarded by the pedicle pins, I have nothing to add except that I ordinarily begin separating the peritoneum an inch above the attachment of the bladder. As to ligating the stumps in three parts, I sometimes do this and sometimes only ligate the outer thirds or quarters, which contain the large vessels, and place sutures on the pared edges deep enough to act as efficient hæmostatic agents. The latter procedure is sometimes an easier and quicker one in stumps that are dense and not very vascular. The ends of the ligatures are all left about six inches long, as before described. I have not yet seen fit to neglect an efficient ligaturing of the stumps, so as to depend entirely on the clamp.

The elastic ligature is removed and the vagina perforated by hæmostatic forceps passed down between the thumb and

cervix, as the stump is held in the palm of the left hand, a very easy manœuvre. I enlarge the vaginal rent by two short scissor-snips laterally, two short ones diagonally, and a longer one forward in the median line under the slightly separated bladder. The longitudinal median cut bleeds less than a lateral one of equal length. The cut edges of the vaginal walls are held well up by forceps, so that there need be no danger of wounding the bladder, nor of losing sight of any large vaginal artery that might possibly be severed.

The stump is then turned into the vagina, and the long ends of the ligatures given to an assistant, who draws them out of the vulva and holds them.

Instead now of putting on the clamps, I leave that as the last step, as was suggested to me by Dr. Merriman, of Chicago. The advantage of this is twofold; the peritoneal cavity is closed before I soil my hands by the vaginal manipulation, and the sewing of the peritoneum over the stump can be done nearer the surface than if it were held down rigidly by the clamps.

I then put the fingers of my left hand in the cul-de-sac of Douglas, and lift the cervix as high up toward the surface as possible, and sew the bladder-peritoneum to the posterior wall of the cervix. As this may become a difficult procedure in fleshy patients, I will give the steps in detail: I grasp with needle forceps, a short, straight needle armed with fine catgut, pierce through the bladder-peritoneum near the left stump; then through the peritoneum on the posterior surface of the cervix, and direct my assistant to tie a knot, which brings the bladder peritoneum back over the stump, while I am keeping my left hand in place under the stump, holding the intestines out of the way. Then I pierce the bladder peritoneum and cervical peritoneum again with my needle, and place an uninterrupted suture across to the other pedicle. The catgut is drawn tight and the ends tied before I remove my left hand and liberate the intestines. It is surprising what a small wound is left. In case the pelvis be deep, I

have the foot of the table raised for better light and to help keep the abdominal contents out of the way. The matter of keeping the operator's left hand steadily in place during the suturing is important, as the hand of an assistant is more in the way in a deep pelvis, and must manipulate the intestines more to keep them out of the field. If there remain any oozing, an extra catgut suture is passed so as to check it. The peritoneal cavity can now usually be closed without drainage.

The patient is then placed in the lithotomy position, the vagina opened by retractors, the clamp slipped over the stump and ligatures, oozing from the anterior wall of the cervix checked by diluted Monsel's solution, and the vagina loosely packed with iodoform gauze, to be left for three days. At the end of the fourth day the vagina is gently irrigated with plain warm water, and after that twice a day with a 1 per cent. carbolic solution.

The following modification, which I have not yet carried out, has suggested itself to me for certain cases: When considerable raw surface is left in the pelvis after the enucleation of subperitoneal fibroids, the peritoneal cavity is shut off by sewing together the torn and cut edges over the raw surfaces and over the ligatures of the broad ligament, whose long ends are brought out in the vagina. A strip of iodoform gauze is pushed into either side through the vaginal opening along the ligature so as to drain the oozing subperitoneal connective-tissue space; the gauze to be removed in three or four days, and the ligatures pulled out as they slough off. When there is much disorganization of tissue at the bottom of the pelvis, the broad-ligament stumps are liable in any case to become infected, and such infection causes less trouble when the ligatures are left long. Such infection, however, is not dangerous even when they are cut off short, as the discharge always works along the ligatures to the vaginal opening.

In a parenthetical way I would like to briefly allude to some of the dangers involved in the operation that are not

usually mentioned, and also suggest some precautionary measures.

Perhaps the greatest cause of trouble in abdominal hysterectomy comes from the handling of the intestines. Intestinal paralysis, great abdominal distention, obstruction of the bowels, peritonitis and septic peritonitis, etc., are often due to handling that could be avoided. Not a few avoidable deaths occur from this cause. The only death in this series came from it. The method I ordinarily use to prevent it is to lay a flat sponge over the intestines, and clamp the peritoneal edges of the incision to the edges of the sponge on both sides with hæmostatic forceps. This allows the wound to open wide laterally, while the abdominal cavity is kept protected down to the cervix.

In sewing up the peritoneal edges at the bottom of the pelvis the catgut sutures must be superficial in character, so as not to lead to oozing from the stitch holes, and be put so as to be as far out of reach of the sloughing stump as possible. They should also shut off the broad-ligament ligatures from the stump region, and check all bloody oozing. Vaginal arteries when severed should be tied with fine silk or catgut. In ordinary cases the strip of gauze that passes over the stump into the post-vesical space should be removed in thirty-six hours to allow the tissues to collapse after the oozing has stopped. The gauze under the stump may be left three or four days. The bladder should not be allowed to become distended during the first two or three days.

For the purpose of comparing methods, we may divide them into three varieties, viz. : the intra-peritoneal, the extra-peritoneal, and total extirpation.

The fatal objection to the intra-peritoneal variety lies in the character of the stump. It is often too large for the peritoneum to take care of safely. When reduced in size, or naturally small, its elastic character is such that it is apt to contract and allow of secondary hemorrhage; or else must be tied so tightly that sloughing is apt to occur. These difficul-

ties have proven so real in practice that even in the hands of Schroeder and Martin the operation has turned out to be a prolonged, difficult, dangerous, and unsuccessful one, and is being abandoned by the best surgeons.

Total extirpation would be ideal but for the fact that the end does not justify the means. The operation is unduly prolonged, and the intestines dangerously exposed and handled for the purpose of removing the healthy cervix, when the cervix can be rendered harmless by less heroic measures. The reputation of A. Martin, of Berlin, is so well established that I feel at liberty to criticise the operation he has performed without running any risk of criticising his skill as an operator. He has operated in this way the greatest number of times of any man, viz., thirty times, and has had eight deaths, or a mortality of  $26\frac{1}{2}$  per cent. Of these deaths, three were from anæmia, two from intestinal paralysis, and one from hemorrhage. These are just such causes of deaths as would result from long and difficult operations. Such a mortality in the hands of such a master can hardly encourage less experienced men to undertake it as a routine operation.

Among extra-peritoneal methods ventral fixation can in most cases be quite safely performed; but its unnatural character and the after-effects are such that even Keith, who was the most successful operator, shrank from it. The unnatural traction upon the cervix, the troublesome sloughing or necrosis following, and the frequency of subsequent hernia, have led others, as well as myself, to persistently seek for a less barbarous method, even while applauding its safety.

Vaginal fixation has seemed to me to possess most of the advantages and few of the disadvantages of the other methods. It has so far proved to be quite safe, having given a mortality in my hands of one in twenty, or 5 per cent.<sup>1</sup> It is as short in execution as the intra-peritoneal variety, much shorter than total extirpation, and almost as short as ventral fixation. It

<sup>1</sup> Up to date the mortality is one death in twenty-two, or  $4\frac{1}{2}$  per cent.

need involve but little exposure of intestines. It leaves the stump and cervix in a natural position, entirely below and outside the peritoneal cavity. It leaves the smallest wound-surface exposed in the peritoneal cavity of any other method. It has, like total extirpation, a safety-valve in that there is an opening at the bottom of the peritoneal cavity stitched up only by superficial catgut sutures. It preserves the portio vaginalis and vagina unmutilated. Bladder rents can be treated extra-peritoneally without displacement of the viscus or danger to the patient. It fulfils all indications. Even the necrotic stump is held off from the wounded tissues, thus obviating almost all objection to it. A reasonable objection cannot be made to the mere fact that the stump sloughs, until some method has been devised that will enable us to prevent hemorrhage from it, without causing sloughing or ulceration. Even in total extirpation we have one death in thirty from hemorrhage, and must, I suppose, have some sloughing or ulceration in the pericervical ligatures if we tie them tight enough to make sure against hemorrhage.

RULES TO BE FOLLOWED IN THE EFFORT TO  
PREVENT MURAL ABSCESSSES, ABDOMINAL  
SINUSES, AND VENTRAL HERNIÆ  
AFTER LAPAROTOMY.

BY HORACE TRACY HANKS, M.D.,  
*New York.*

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**MURAL ABSCESSSES.**—Abscesses in the line of the abdominal incision, as we all know, are not necessarily dangerous, but they are attended with fever and pain on the part of the patient, and are a source of great anxiety to the young surgeon. And they help to make the track for a later ventral hernia as is well known to the more experienced surgeon.

Can they be avoided? To answer this question we must remember that an abscess, in the vast majority of cases, is due to a disturbance of the blood- and nerve-supply, either directly or indirectly, or to a deposit of sepsis, in the wound. The disturbance of blood- and nerve-supply as a cause of abscess, may require a word of explanation. A wound that is lacerated does not heal as quickly and as kindly as a smooth-cut wound. The lips of the wound that are pulled apart by the fingers, and pressed hard upon with retractors, are injured much deeper. The bloodvessels and nerves are possibly wounded for a full half-inch beneath the edge of the tissues. Consequently the vitality is low, and there is a disposition to form abscesses from direct death of a part of the wound; and in many cases this part of the wound is badly strangulated by deep sutures, which have been tied unnecessarily tight.

It is not safe or good surgery to tear up the tissue with the finger, separating the layers of the abdominal wall, making



large or small pockets for the deposit of sepsis or blood clots. Other things being equal, make a clean-cut wound through the abdominal wall, and retract the edges of the wound with a proper, safe retractor, using care in this also; never hold the retractor too firmly, as I have often seen done, for ten or fifteen minutes, without once loosening the instrument, to allow a return of circulation in the lips of the wound.

Make a larger wound *at first* rather than do any injury by too great pressure.

Sometimes, undoubtedly, the lips of the wound are severely injured by too much sponging with too hot water, or by using too strong germicide fluid. Avoid both sources of injury. Sometimes, too, the lips of the wound are seriously injured by the hand, in the vain effort to pass it into the abdomen through a too small incision, and later in an effort to deliver the tumor *through* this small opening. Because Mr. Tait has taught us to work through a small incision *when we can*, we must not suppose that he does not believe in a *large* incision *when necessary*. We have often erred in applying his rule for *special* cases, to *all* of our cases.

Make the incision large enough to enable you to work intelligently and without difficulty *in* the pelvis, and without injury to the lips of the wound while the hand is in the pelvis.

The question of *sepsis* at the time of the operation is one, however, not to be overlooked. Undoubtedly many an abscess is caused by the direct deposit of sepsis in the edge of the wound.

Make sure that the hands, instruments, sponges, towels, and all outer garments which can possibly be touched during the operation, are absolutely aseptic.

The patient should be made clean, the pubis shaved, and a moist bichloride dressing should be kept over the abdomen for twelve hours before the operation. This last suggestion is too often overlooked. I believe it to be important. No iodoform or aristol collodion dressing is needed to cover the wound when a *sterilized* cotton dressing is used. Another source of sepsis is

the dressing, which is often allowed to remain too long over the wound before it is changed. We have not yet found a perfect dressing—one which we can safely trust on a wound of the abdomen for six days without removal. Even a biniodide of mercury dressing, which we all had hoped would be perfect in this respect, is far from an ideal dressing. We have often removed it after three days, and found underneath an abundant crop of pustules—some quite deep and large. I know of no germicide dressing which it is safe to keep *in situ* over the wound for six or eight days without inspection. We must not practise and teach that a dressing can remain for six days without changing. It is far better, if we wish to avoid mural abscesses, to remove the dressing, of whatever sterilized material is used, on the third day, and wash the wound with a warm germicide fluid and apply another sterilized dressing, doing this every second day, until the time to cut some of the sutures has arrived. And, furthermore, we should apply a moist bichloride dressing to the wound for full two hours *before cutting* the sutures. In other words, under no circumstances *introduce* sepsis as you withdraw a suture which is not absolutely aseptic. Sutures *must* be made aseptic before cutting and removing. Our abscesses which appear after the eighth day have almost always been caused by this carelessness.

The selection of needles and suture material, and the manner of introducing the needle may also, undoubtedly, be a cause of abscess.

Use a needle which will pass *easily* through the abdominal wall. I do not think in abdominal surgery, that the shape of the wound which the needle makes is of great advantage. The rules to follow are to have a sharp needle in all cases, a long and strong needle in thick-walled cases, and not a large needle in any case. A few Keith or Skene fine trocar-pointed needles, each carrying a sterilized suture of silk, or silkworm-gut, will be the ideal needle to use in passing sutures through the abdominal wall, when the edges can be

*easily raised and everted.* But if the wall is *tense* and the wound small, a *stronger, slightly-curved Hanks-Peaslee* needle will serve *best*, or a slightly curved *Hagedorn* needle may be used. I have found silkworm-gut easy to use with this handled needle, and my assistant threads the needle instantly after its passage through the wall on his side. Silkworm-gut or silver is best for holding the different layers together. I have found the sharp two-inch, round-pointed, slightly curved needle best for the peritoneum. For the fascia a sharper, stronger needle should be selected. I make these suggestions because I believe that unnecessary punctures are often made with poor needles, needles not adapted to the work in hand, and I believe every puncture, especially with a large needle, is an additional source of irritation. Too many surgeons are not good mechanics, and they expect to do all the work in the different abdominal wounds with needles of the same length and size. In very stout patients, when the adipose tissue is two and a half inches or more in thickness, it may be well to close only the peritoneum, muscle, and fascia, and leave the adipose tissue and integument to heal slowly by granulation, as recommended by Dr. Pryor.<sup>1</sup> By this way Dr. Pryor seeks to avoid the mural abscesses which are so liable to occur in every *stout* woman. I have never tried this plan primarily, but I have always practised a similar procedure in closing the sinuses caused by drainage-tubes and mural abscesses. I believe it a wise suggestion to follow in stout women and shall certainly follow it in the future.

To recapitulate: In trying to avoid mural abscess—

1. Make a *clean-cut* wound and not a *lacerated* wound.
2. Do not *separate* the *different layers* unnecessarily.
3. Do not *retract* the lips with *too much force* or for *too long a period*.
4. Do not use *too hot* water, nor *too strong germicide* on lips of wound.

<sup>1</sup> Medical Record, September 19, 1891.

5. Have the abdomen *aseptic* by keeping a *germicide dressing* on abdomen for twelve hours before operating.

6. Do an *aseptic operation*.

7. Make no unnecessary *punctures with needles*.

8. Do not *strangulate wound* with *too tight sutures*.

9. Under proper aseptic precautions remove the *sterilized dressing every two days*, wash with *warm germicide fluid*, and *re-dress as before*.

10. Before cutting sutures have the patient wear a moist bichloride dressing for two or more hours. Be sure no sepsis is on any suture before removing it.

SINUSES IN TRACK OF DRAINAGE-TUBES.—These accidents, like mural abscesses, are not dangerous, but they trouble our patients longer and humiliate the surgeon beyond expression. I believe they can be avoided.

1. Never use a drainage-tube when not needed.

2. Never allow one to remain *in situ* for over twenty hours without drawing it upward a third or half an inch, and fastening it in its new position.

3. Entirely remove it on the *third day*, unless purulent matter is withdrawn on that day, or the case is one of tubercular peritonitis. A little serum will do no harm if it is allowed to remain in the cavity.

4. Insist upon much more care being exercised by the house surgeon or nurse, in clearing the tubes. They must be kept *sweet* and *aseptic*.<sup>1</sup>

5. Always have one loose suture untied in the track of the tube, which is to be tied as soon as the tube is removed and the parts thoroughly cleansed.

VENTRAL HERNIA.—This accident is far more frequent than many suppose.<sup>2</sup> They do not all occur alone in the practice of the inexperienced operators. Some of our most brilliant operators find that there is a large per cent. of patients with

<sup>1</sup> See the Johns Hopkins recent report on infection through drainage-tubes.

<sup>2</sup> See our Fellows' articles, Drs. Wylie and Chadwick, and Dr. Pryor's article in Med. Record, Sept. 19, 1891.

ventral hernia, if they examine them after two years. I have been called to operate for this distressing accident five times in three months during the last year. These patients had been operated upon by four different gynecologists. One patient only had been operated upon by myself. If I have seen five cases in three months, what must be the number seen by all the other gynecologists in New York City alone during the year. During the last few years in the Cripples' Hospital in New York, fifty patients, from among the *poor*, have applied for suitable trusses or supports for ventral hernia following laparotomy. The cause of ventral hernia is, of course, the giving way of the muscle and fascia in the line of the wound. I believe we can prevent the accident.

I know, and many of you know, how very infrequently the peritoneum, the muscle, and the fascia are brought into exact apposition during an operation. I have seen this done so slovenly that nothing short of a miracle could prevent a hernia. Many and many a time, when a deep wound is being closed, the peritoneum on one side is allowed to slip up between the fascia, thus paving the way for an early rupture. To avoid this accident, and for other reasons, Ségond favors vaginal hysterectomy, as in that case there is no abdominal cicatrix.<sup>1</sup>

Pozzi<sup>2</sup> and a host of others advocate suturing the wound in layers to reduce the possibility of hernia in the abdominal cicatrix to its minimum proportions. The drainage-tube is far less likely to be the cause of the hernia. When a large one is used, possibly it may be an exciting cause, but generally it is surrounded by plastic material, and no portion of the intestine can get in position to work through the artificial canal. The cause, therefore, is due to the inexact way in which the different layers are brought together, or to the weakness which has resulted from an abscess in the wound at the point of union of

<sup>1</sup> Abstracts in Am. Journ. Obstet., August, 1891, p. 1010.

<sup>2</sup> Am. Journ. Obstet., August, 1891, p. 1014.

the fascia. The rule to be adopted and followed in all cases, is to bring the peritoneum together with very fine continuous cat-gut sutures, then the muscle and fascia in like manner, making sure of the muscle as well as the fascia. No wound is safe unless the fascia is *strong*. Whatever plan you may adopt for the adipose tissue and integument, the peritoneum, and especially the *muscle* and *fascia*, must be treated as above described if the danger of hernia is to be reduced to a minimum. A good course to pursue is to keep the different layers together by inserting two deep sutures of silkworm-gut *first*, and allowing them to remain loose until the fine catgut, suturing in the peritoneum and fascia are each, in turn, completed; then by gently tightening these deeper sutures, bringing the different layers in apposition. Do not draw these deeper sutures too tightly, or there will be strangulation of the deeper tissues. If you are sure of your catgut you can do all the work with it. Certainly not more than two deeper silver or silk or silkworm-gut sutures are needed. I do not insist upon any one plan for closing the wound. I only insist upon *bringing each layer in exact* apposition with its fellow in regular order in the most exact and approved manner.

The annoyance and distress of some of these women suffering from a monstrous hernia cannot be exaggerated. We ought to be willing to give five minutes extra time to a scientific suturing of the abdominal wound in order, if possible, to prevent an accident so serious to the patient and so humiliating to the surgeon.

#### DISCUSSION.

DR. THOMAS ADDIS EMMET, of New York, stated that he regarded the suture used as a frequent cause of hernia. If silver wire were used, and used properly, much better results would be obtained than if silk were employed. In no spirit of egotism he made the statement that he believed that he had as few cases of

abdominal hernia after ovariectomy as any surgeon. His results may have been on account of his having done so much plastic surgery, but he attributed it to the proper use of silver wire. We must use the wire as a splint, and, if not too small, it will keep the two sides of the wound together. (The speaker here gave an illustration on the board, showing that by silver wire properly adjusted a greater amount of surface can be brought together than can possibly be approximated by means of silk, catgut, or any other ligature.) When a silk suture is tightened, a separation takes place, more or less, in the middle by the wall doubling upon itself with an approximation of peritoneum to skin. The muscular tissue and fascia become separated, just in proportion as the suture is tightened, thus giving rise to a large number of the cases of ventral hernia.

DR. H. T. BYFORD, of Chicago.—I have had a little trouble with mural abscesses. The two principal causes are, first, want of perfect asepsis; second, dead material in the wound. All try to obtain the first, but the matter of leaving dead tissue in the wound has not received sufficient consideration. It can be prevented only by paying attention to many different points. In fat persons it is almost impossible not to have considerable bruising and destruction of the fatty tissue; hence it is necessary in many cases to cut away some of the fat at the edges. Another cause of sepsis is the use of buried sutures. It is almost impossible to have them invariably aseptic and to keep them so. One of the most disagreeable forms of mural abscess arises from separation of the peritoneum from the parietal walls around the edges of the wound, and a failure of perfect adjustment by the sutures. This leaves loose spaces to be filled by blood-serum, which is liable to become infected, and to infect the catgut. These abscesses may cause great pain and may attain considerable size before discharging. Where the peritoneum is sewed separately and is not included in the next layer of stitches, I have found such abscesses very liable to occur.

The character of the suture and the manner of its introduction are important points to be considered. Silkworm-gut is best, because it is more easily adjusted than silver, and does not carry secretions into the wound as does the silk. Silkworm-gut, like

silk, tends to draw the inclosed tissues within a circle. If the needle is put straight through the tissue, it practically includes a square of tissue, and presses most firmly upon the four corners of the square at the entrance and exit of the thread, and tends to produce ulceration at these points, and such displacement at the centre as Dr. Emmet has described (blackboard illustrations). In order to produce equal pressure, and to hold the sides of the wound together, the needle must be introduced in a curve, so that the parts held by it will form a circle—*i. e.*, the needle must be entered near the edge of the skin, passed deeply into the tissues in a lateral direction, and then be made to emerge from the peritoneum near the edges again. Thus, the broadest hold upon the tissues is near the centre and includes the fascia.

In my experience, all that is necessary to prevent later infection is to keep the wound dry by occasional change of powder. In case of suspected infection, I have usually been able to prevent its spread by washing off the wound twice a day with alcohol and renewing the powder.

DR. W. GILL WYLIE, of New York.—I wish to make a few remarks on the subject of ventral hernia. Six or eight years ago I wrote a paper on the question of operating for ventral hernia following laparotomy. I had given considerable study to the subject before writing that paper, had operated in six or eight cases, and I am satisfied that at that time I reached the true solution of the cause of these cases and how to prevent them. Recognizing the fact that the peritoneum below the umbilicus is a loose tissue, having no great strength, and that bringing it together is very easy on account of its redundancy, I next gave attention to the muscles themselves, and soon took notice that their transverse bond of union was of very little value. If one can exclude the fascia covering them, he can demonstrate that their transverse strength is almost nothing. The chief point to be observed in making the abdominal opening is to avoid the muscle; open as nearly as possible in the linea alba, the fascia of which is the strong part of the abdominal wall at this point. When formerly we operated mainly for large tumors, the distention of the abdomen had been great, and after the operation the abdominal walls were much relaxed and homolo-



gous apposition easy, and ventral hernia was uncommon. But when we came to operate later for small tumors, or where there were no tumors at all, the distention after the operation was sometimes great; and if the fascia retracted, the peritoneum would bulge up into the wound and cause a hernia. At first the results might have seemed to be good, for the scar tissue had some strength, although similar tissues had not been brought in apposition. But we know that it is only a question of time for scars to disappear, unless the apposed structures are homologous. The result of this method of managing the abdominal wound, fascia not having been united to fascia, was the occurrence of ventral hernia in many cases. I pointed out our duty to sew up that fascia, if it were necessary, independent of other tissues. I am convinced that if you will adopt the rule of bringing together and keeping together even that one strong fascia, you will not have a single ventral hernia. If you fail to do that, it does not matter what sutures you use or what other procedures you may adopt, you will have ventral hernia. Time is an important element, for it takes fully two weeks for this hard white fascia to heal perfectly, and getting up too soon, straining at stool, etc., may separate the edges.

DR. JAMES R. CHADWICK, of Boston.—I gave some study to this subject several years ago, and became convinced that the views of Dr. Wylie are correct—that hernia results because the fascia of the transverse muscle does not unite. I have not found, however, that his explanation of how to make it unite is efficacious. It sounds simple enough when we are told to get hold of the divided tendon, to insert sutures, and then to secure its reunion; but it does not reunite, at least it has been my experience that the apposed surfaces are by no means sure to unite. The cicatrices which I have seen after abdominal section show generally that all the layers of tissue unite together—tendon, skin, fascia, etc. I cannot effect a union of that special fascia. I am, therefore, not at all sure that we are on the right track in trying to cut through that fascia—the linea alba. I am half inclined to believe that we may get better results if we cut deliberately through one of the recti muscles, and thus have tissue which will readily heal in a satisfactory way. I do not believe the drawing

on the board illustrates the true state of the wound ; the tissues do not lie so flatly and neatly in apposition. Nor do I believe that the wire suture brings them together any more flatly than any other suture. I use silkworm-gut now by preference ; I think that it is cleaner and better. It seems to me that we have not reached the true solution of this question, in spite of what Dr. Wylie has said. I have nothing better to offer, but I have not found that the principle laid down by him, on being followed up, gives better results than those which I had obtained before. It is essential to include a big piece of the abdominal wall on either side of the musculo-tendinous edge, and to bring the parts together in broad apposition. That is about all that my study has shown me to be of real value.

DR. R. B. MAURY, of Memphis.—I have never had but one case of abdominal hernia follow laparotomy. Nor do I claim credit through any special method of operating. In the more than one hundred cases operated upon I have simply passed a straight needle through the walls, bringing the cut surfaces together by suture. The one case, strange to say, occurred in a patient in whom the opening was little more than an inch and a half long, and was made for the purpose of washing out the cavity in a case of immense suppurating hæmatocele. A drainage-tube was used. Two or three months after her recovery the patient had dysentery, with tenesmus, etc., and then ventral hernia formed. I simply state my experience, without giving credit to any particular method of suturing.

DR. HANKS.—I remember distinctly the paper of Dr. Wylie. I believed in it then, and I believe in it now. But half the operators of to-day, it would seem, have not considered this subject carefully. I have been surprised at the number of ventral herniæ which are found. In the Hospital for the Ruptured and Crippled, in New York, over fifty different patients have applied for trusses for the relief of ventral hernia following laparotomy ; this means fifty bad results among the *poor* only. If this paper will set physicians to thinking, I shall be very glad.

I use a straight needle, catching a third of an inch of the integument and a full inch of the fascia, and a very small portion of the peritoneum. I suppose that I have had no more cases of

hernia than others, but even in my laparotomies (small in number when compared with those of some of you) I have had three cases of hernia. I hope that the subject will be considered, and that right conclusions be drawn, so that in the future we may be more careful in closing the abdominal wound. It is a terrible thing for a woman, who has perhaps only a catarrhal salpinx or a tubal cyst, with a few symptoms, to submit to a laparotomy, and subsequently be compelled to practically carry her abdominal viscera in a towel. I think that our success will depend on doing an aseptic operation, on not injuring the tissues of the abdomen with anything which we may use, and on bringing together peritoneum and fascia separately. Under no circumstances should we tighten the deeper sutures before the fascia is closed. By following these rules, I think that we shall prevent nine-tenths of the cases.

SOME CLINICAL TESTIMONY AS TO THE  
ULTIMATE RESULTS FROM THE  
REMOVAL OF THE UTERINE  
APPENDAGES.

BY THADDEUS A. REAMY, M.D., LL.D.,  
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THE following observations are based upon a part of my work, done at the Good Samaritan and Cincinnati Hospitals, at my private hospital, and at private residences in the years 1884, 1885, 1886, 1887, 1888, and 1889. Not coming within the purpose of this brief paper, the work of others is not considered. Operations for ectopic gestation, for removal of ovarian tumors, and for malignant disease are excluded. No cases are included but those of which I have reliable information, as to state of health, from two to five years subsequent to the date of operation. This information was obtained either from the patient, the husband, intimate friends, or the family physician. Much care has been exercised in securing the data in this regard. As presented, I think it trustworthy. The total number of cases in the report is 166.

*Social state.* Married, 109; widows, 10, of whom 2 have remarried since the operation; single, 47, of whom 3 have married since the operation.

In 144 cases both ovaries, with tubes, were removed; in 15 cases but one ovary and tube removed. In 3 of these cases the remaining ovary and tube removed at a second operation. Three of the women from whom but one ovary was removed, being married, have since the operation borne each a child, one of them two children; labors being normal and health remaining good.

In 7 cases adhesions were so universal and firm, and inflammatory changes of structure in tubes, ovaries, and adjacent parts so great, that removal was impracticable, and after liberating so far as possible adhesions, the operation was abandoned. Of these, 2 have fully regained their health, 3 much improved, and 2 not improved.

In 12 cases the appendages were removed for control of uterine hemorrhage associated with fibroid tumors of the uterus, and for arrest of growth of the tumors. In 6 of these cases hemorrhage was completely controlled and the tumors reduced in size. In 3 cases out of this 6 the tumors were so reduced as not to be detected by bimanual examination—perfect cures. In 3 of the remaining 6 cases hemorrhages diminished as to time and degree, and the growth of tumors retarded. In the 3 remaining cases no control of hemorrhage whatever, and no influence over the growth of tumors. Made a successful hysterectomy upon one of these last, three years subsequent to the first operation, the tumor having meantime undergone cystic degeneration. The patient is now in perfect health. In no one of these 12 cases had the growth, at the time of removal of the appendages, ascended above the level of the umbilicus.

Cases in which the development had attained to greater dimensions were excluded from this operation on the ground of the difficulties and dangers of its execution under such circumstances, and the further ground that not much benefit from the procedure could be expected.

In 3 of the cases of removal of a single tube and ovary, the operation was done for relief of a prolapsed and painful ovary. In 1 of these 3 cases the ovary was increased to the size of an orange and was cystic, the tube much distended, and the fimbriated extremity closed by adhesions (hydrosalpinx). In 1 of the cases the ovary had descended until it could be detected just within the fourchette. Each of these cases was completely cured by the operation.

In 6 cases the operation was done for the relief of hystero-

epilepsy; 4 of these subjects were single and 2 married. Ages of those unmarried: eighteen, twenty-two, twenty-four, thirty. The disease had continued in the first case three years, in the second four years, in the third three years, in the fourth eight years. In the first, second, and third cases the ovaries were congested, enlarged—not cystic; the tubes inflamed. In the fourth case hydrosalpinx with cystic ovary on the left side; shrivelled ovary on the right side. First, second, and third cases completely cured. In the second case the mental power had been much impaired, but was completely restored within four months after the operation, remaining good. Case 4 was in no way improved, although menstruation was not repeated after the operation. Indeed, the mental condition was worse from the date of operation. I infer that the age of this patient and the duration of the disease were important factors in the unfavorable results. Of the two married women, one was so much improved as to be considered by her friends as practically cured; the other but slightly improved.

Nine cases were operated on for relief of unbearable dysmenorrhœa, with the ordinarily associated nervous phenomena, due to imperfect development of the sexual organs, the so-called *infantile uterus*. In these cases the operation was done after the failure of dilatation of the cervix, faradization, etc.

Four of these cases were completely and permanently cured. Two others improved in general health, suffering much less, still, however, complaining of pelvic weight, and at times, complaining of lower abdominal tenderness with pain. They are likewise still nervous and hysterical. The remaining three cases have been worse since the operation. They are poorly nourished, they are unhappy, discontented, hysterical in the extreme. They claim to have as much pain now, daily, as they suffered before the operation at the menstrual period only. They are nervous wrecks. I doubt if I shall operate upon such cases in the future. And yet a complete cure in 4 out of 9 cases would justify the hope, that with greater skill

in discrimination of proper cases, the operation may have a proper field, even here.

Three cases were operated on for the relief of purely neurotic symptoms, which had resisted other and varied plans of treatment long persevered in. In one of these cases, the operation disclosed unsuspected disease of the appendages. There was left endosalpingitis with parenchymatous salpingitis, the tube containing a small amount of muco-purulent fluid; fimbriated end of tube closed; ovary cystic, but not enlarged. Right ovary healthy, but tube-walls markedly thickened, both ends of tube open.

This patient had not suffered of leucorrhœa, nor had menstruation been very painful, though it was somewhat irregular. No symptoms were reported pointing to the ovarian and tubal disease found. A complete and permanent recovery from neurotic symptoms, with a gain of fifteen pounds in weight, followed the operation. The unexpected removal of local disease may and probably does explain this rapid cure.

In the remaining two cases the appendages were found fairly healthy, but were, of course, removed, in keeping with the purposes for which the proceeding commenced. One of these cases was markedly improved, nervous symptoms subsiding, with a gain in weight of fourteen pounds. This improvement lasted, however, only for a few months. She is now, after four years, if possible, more miserable than when the operation was made.

The third case was not improved. It is needless to add that I have abandoned surgical interference in this class of cases.

GENERAL PATHOLOGICAL CONDITIONS FOUND.—Excluding the 7 cases in which operation was abandoned, pus was found in the tubes in but 18 cases. Hydrosalpinx with disseminated cystic degeneration of ovaries, on both sides, 30 cases; on one side only, 26 cases—total 56.

Of ovarian hæmatomata, 13 cases. Double hæmato-salpinx with fimbriated ends of tubes closed, and tubes containing

only menstrual blood, 3 cases ; same condition on one side only, 5 cases—total 8.

Double hæmato-salpinx, the tubes containing blood-clots due to repeated hemorrhages from diseased lining membrane of tubes, 8 cases. In three of these last cases there were also blood-cysts of the ovary on one side.

Parenchymatous salpingitis, with both ends of the tubes open, but with walls so thickened as to almost occlude the tube, 29 cases.

Ovaries markedly enlarged from chronic congestion, 14 cases.

Of course, in my list there were many cases in which there were important adhesions between tubes, ovaries, uterus, intestines, omentum, etc. In quite a number adhesions were universal.

In 4 cases there were, in addition to peritoneal and tubal adhesions, abscesses in the pelvic cellular tissue outside of the peritoneum.

Each of these subjects, however, had borne children, a fact which must be regarded as important, as tending to confirm the view that most of these cases have their origin in parturition.

Other pathological conditions found have been already indicated under description of special cases.

**INFLUENCE ON MENSTRUATION.**—In every case in which I was certain that both ovaries were removed (excluding cases operated on for uterine fibroids), menstruation ceased within three to six months. In more than half of the cases it was not repeated after the operation. It is not to be understood that in none of these cases did any discharge follow. Every operator knows that in most cases of removal of the appendages, within twenty-four to thirty-six hours after the operation, a more or less bloody flow from the uterus occurs, that it is frequently accompanied with pain and nervous disturbance, rise of temperature, and acceleration of pulse, but this flow is not menstrual. It is due in part to cardiac causes, to nervous



excitation, to disturbance of the outflow of blood through the ovarian veins by the ligatures, etc.

In several of my cases hemorrhages from the uterus occurred, at irregular intervals, from six to eight months after operation.

In two cases, one of them already referred to, in which a second ovary was removed at a second operation, alarming and almost uncontrollable uterine hemorrhages occurred at intervals of from eight to sixteen weeks, for ten months after operation. Both of these patients are now well, no uterine discharge continuing.

The uniform arrest of menstruation, in the cases here reported, is of significance when it is known that in my earlier operations I was not always careful to tie and cut the tubes close as possible to the uterus, frequently cutting at quite a distance.

This was before my attention had been called by Arthur Johnstone, and others, to the special character of nerve supply and function in this region. I now cut as close as possible to the uterus, because, first, it assures more thorough removal of all tubal disease; second, adhesions between the stump and adjacent structures are not so likely to occur; third, persistent pain is not so likely to follow and defeat the objects of the operation.

Finally, on this point, it will bear repeating, in the light of some modern views as to the importance of the tubes, and the slight importance of the ovaries to the function of menstruation, that my clinical observations show that in every case from which both ovaries were removed, menstruation ceased rather promptly, and that this included cases in which the tubes were cut long and those in which they were cut short alike.

POSITIVE CURES.—Under this head is included cases in which not only was there removal of the dangers from the gross disease of structures found at the operation, but also from the immediate and remote consequences—the patients

being restored to perfect health, and so remaining. Of these there are 42 cases.

Cured of local disease, and general condition much improved, but still not restored to robust health, 70 cases.

Improved temporarily in all respects, with relief from pain, improved nutrition, gain in weight and general strength, and less nervous, but after a lapse of from one to three years falling back into thorough invalidism in all respects as bad as before the operation was done, 36 cases. In no way improved at any time after the operation, but rather worse, 18 cases.

**INFLUENCE UPON SEXUAL APPETITE.**—As to 44 of the cases operated on, the joint testimony of husband and wife, communicated to me by the husband, is as follows:

In 14 of the 44 cases sexual appetite was totally extinguished from the date of cessation of menstruation. In 7 cases it was lessened, but not extinguished. In 16 cases it was not influenced. In 7 cases it was markedly increased.

These results are quite at variance with what is claimed by Mr. Tait and others on this point. But in this connection it is proper to state that I know of two instances of women (of course not included in this report), in each of whom I did hysterectomy for cancer, removing tubes and ovaries, one of the women being thirty-six years of age, the other thirty-eight. In both subjects the sexual appetite was much increased, and sustained after recovery from the operation.

Further on this subject: Careful inquiry, made by the writer during the past twenty-five years, of married men, upon whose intelligence and candor reliance could be placed, has elicited information which shows that the instinct under consideration ceases wholly from the date of the natural menopause with many women. And that, on the other hand, it is in some women increased from that date.

**CONCLUSIONS.**—First, pyosalpinx does not exist in nearly so large a proportion of cases of pelvic diseases, encountered in patients from the middle and upper classes, as is generally claimed by writers.

Second, in these classes, gonorrhœa does not play nearly so important a rôle, in causation, as is generally believed.

Third, in properly selected cases removal of the uterine appendages promises most satisfactory results, and should be promptly done.

Fourth, removal of the appendages for the cure of hystero-epilepsy has been too severely condemned of late. In certain cases the procedure offers much hope.

Fifth, the measure is not warranted by sound reason, nor by clinical experience, for the cure of purely neurotic cases.

Sixth, many cases of pelvic disease involving the appendages, and cured by their removal, could be as thoroughly cured by more conservative methods, which do not sacrifice these important structures.

Seventh, many cases promptly reported to societies and in medical journals as cures, if carefully watched for a few years, will be found to be in no better condition than when operated on. Their publication has been misleading.

Eighth, the ease with which laparotomy for removal of the uterine appendages can be done, and the low mortality following it when done by an expert, may partly explain the growing prevalence of the procedure and its adoption in cases where the pathological conditions do not warrant—circumstances under which the mutilating measure is a crime which cannot be too bitterly denounced.

Ninth, the arrest of menstruation after removal of the ovaries, in so large a number of cases, strongly confirms the already well-established belief in the relation of the ovaries to that function.

Tenth, the influence of removal of the uterine appendages upon the sexual appetite has generally, heretofore, not been fully and fairly stated.

Eleventh, the relation of the conditions established by the removal of these organs to the psychoses are probably not fully appreciated.

## DISCUSSION.

DR. JOSEPH TABER JOHNSON, of Washington.—It is impossible in a limited time to discuss more than a few points in a paper like this. I was struck by the fact that the author, on several occasions, removed but one ovary, and was compelled afterward to perform a second operation, subjecting the patient to all its attendant dangers, disease having between the two operations extended or affected the remaining ovary. It strikes me that we may not exercise sufficient care looking to the possibility of having to do a second operation when we do the first and remove but one ovary. In our desire not to entirely deprive the patient of the possibility of procreation, I fear we are tempted too strongly to leave the other ovary in cases in which some disease may exist. In two cases in which I was persuaded by the physicians present at the operation to leave one ovary, although my own belief was it should come out, there was a necessity subsequently for a second operation. The patients were finally cured of the trouble which made the first operation necessary.

With regard to removal of the appendages for bleeding fibroids, it seems to me that the operation is quite justifiable. In cases in which the tumor is not larger than a cocoanut, and has contracted no adhesions through which it gets other blood-supply, we have the greatest promise that success will crown our efforts and save the patient the horrors and dangers of subsequent hysterectomy. In fifteen out of one hundred and thirty laparotomies performed by me the appendages were removed for uterine fibromata, the result being absolutely successful; growth of the tumor was arrested, and hemorrhage, which in two cases had been so severe as to leave the patients pulseless, was checked. It is in this class of cases that we shall get our most brilliant successes, and have the unmixed blessings and thanks of the patient showered upon us, without any of those after-claps in the shape of relapses and complaints of not being thoroughly cured.

With regard to the nervous cases: it is in these that the greatest amount of grumbling occurs—it is in these that we have the least satisfaction. Yet it has been in some of these cases that we have

had the most brilliant results. So far as my own work is concerned, I am giving them a wide berth at present. There is so much to be done in cases in which the indications are clear, such as pyosalpinx, etc., that our time is pretty much occupied. The neurotic patients are the grumblers to begin with; they are the nervous, the hysterical—those who are frequently on the border-line of insanity before the operation, and are not lifted out of it by the operation, although temporarily it may appear a success. The disease of the ovary, if present, is only one of a number of conditions going to make up the case. This part of the patient's illness may be eliminated, and yet she may remain a partial invalid.

If a cure does not follow the operation, the patient and her friends make loud complaint. Therefore I think, if we would not mar our results, we had better let neurotic cases severely alone, and devote ourselves to those in which disease of the tubes and ovaries is clearly made out by physical examination. In the other class, all other means having been shown to be futile after thorough trial, perhaps we shall be justified in doing an operation, first, however, explaining to the patient that we are not at all sure that it will succeed.

In the dysmenorrhœal class of cases the operation does not seem to have the justification which is present when there are collections of pus. Many other kinds of treatment have proved successful in relieving dysmenorrhœa without laparotomy. At any rate, our statistics will show better results where the operation is restricted to cases of diseased ovaries and tubes, as shown by physical signs.

With regard to the effect on the menses, I have seen the same excellent results follow the operation of which Dr. Reamy has spoken, with one or two exceptions, in which a good deal of bloody discharge took place from the uterus, though not with the same regularity as the menstrual flow. In two cases a polypus was found in the uterus. I think that we are apt to come to the conclusion that these patients do not require examination after removal of the tubes and ovaries; but in these two cases, as just stated, I discovered a polypus, removal of which cured the patients.

As to the influence of castration on the sexual appetite, I do not think that we can be accused of the mutilation and unsexing of women, which has been so much charged against us by those opposed to the operation. In the cases in which the operation is absolutely required, the unsexing has been done before the surgeon arrives. In other words, where there is sufficient disease to call for an operation, it is the diseased condition which unsexes the patient. The surgeon only removes organs which are painful and useless.

So far as my knowledge goes, if the patient possessed a sexual appetite before the operation, it has not been destroyed by the removal of the appendages. The small amount of testimony which I have been able to gather on this very delicate subject goes to show that the only effect produced has been to increase the sexual desire where it previously existed, and to increase the willingness to tolerate intercourse where no desire was ever present. In both cases the same reasons obtained, namely, the absence of *painful* coition and the removal of the possibility of conception—both these reasons had made coition so positively distrustful, painful, and alarming as to drown out all desire in patients *needing* an operation. I suppose in time the sexual organs will undergo the same atrophic changes after the premature as after the normal menopause, including the sexual instinct.

In cases where life is saved by the removal of pus tubes at the expense even of the sexual desire, it would seem that was no cause for complaint.

DR. W. GILL WYLIE, of New York.—I have listened with a great deal of pleasure to this paper. The pleasure was perfectly sincere, because I had the good fortune, or, perhaps, the misfortune, to take a part in this question when it was not at all popular—when many times I was among a decided minority. After listening to this paper I have come to the conclusion that I am not as much of a radical as I have had the reputation of being. I see very little to criticise in it. It has covered the ground well. My views are well known, and it is useless for me to say much. But one thing surprised me, namely, the comparatively large number of cases in which the reader had

been unable to complete the operation, apparently on account of adhesions. My experience has been a large one, probably because patients were sent me on account of the interest I was known to take in it. Yet in somewhat over four hundred laparotomies for removal of diseased tubes and ovaries, in no case was the operation left incomplete; nor have I lost many patients.

The Doctor's results in hystero-epilepsy were better than my own, although the number of cases in which I have operated for this condition does not exceed six or seven. A few of the patients were cured. His success in securing complete cessation of menstruation was better than my own, whether on account of a different class of cases, or a difference in the operation, I do not know. From a close study of the subject, I have come to the conclusion that it is very much more important to remove all of the ovarian tissue than all of the tube. I am not convinced that tying the tube close to the uterus has the effect which the author attributes to it. I am not convinced that in the majority of the cases menstruation has not returned. In removal of the appendages menstruation has returned in about five or six per cent. of the cases and proved very troublesome, but it was associated with one of two conditions, usually some diseased condition of the uterus which was not cured by the operation; and I may say here that it is one of the grave mistakes in removing the appendages to assume that it will completely cure all uterine disease. It does not do it. But proper cure of the uterine affection *after* this operation would complete the cure in many cases in which the results had not been so good as had been expected. But in most of the cases in which menstruation has returned and has been in any way regular, some ovarian tissue remains, and very likely can be detected by examination under ether. I have in eight or ten cases removed cystic tumors from patients whose tubes and ovaries were said to have been removed. In one I operated the third time to remove cysts. In every case the cysts formed in the stump, although in all I had felt satisfied that I had removed all the ovarian and tubal tissue. Indeed, I take great pains to do that. Inflammatory action tends to shorten the ligament in such a way as to make complete removal difficult.

The number of the cases reported in the paper which contained

pus was rather low. Fully 70 per cent. of my own contained pus or a well-marked pyogenic membrane. In the last two or three hundred cases I do not think there were more than three in which the tube was not occluded. Except in operations for fibroids, I regard occlusion of the tube as almost a positive indication of disease. The author's results from operations for fibroids have been much like my own; but I never resort to this treatment where the tumor is large. I lost one case from rapid degeneration.

DR. S. C. GORDON, of Portland.—There is so much to be said on this subject that one hardly knows where to begin. I have had quite an experience in this kind of surgery. I think I have operated seventy times in the class of cases described by Dr. Reamy. I have not kept so careful a history of my cases as he has, so that what I shall say will be of a general nature. It seems to me that Dr. Reamy's statements ought to put at rest even the insinuations which our friend and President made this morning. For, out of his whole number of cases, he has shown forty cures and sixty patients very much benefited. There are a hundred who were certainly benefited out of a total of one hundred and sixty operations. Now, these women belonged to a class who go all over the country, as far as their means will allow, consulting men representing all sorts of isms, pathies, and everything else in the profession, yet remained miserable. Here were a hundred women benefited by this "indiscriminate slaughter of the innocent," if you please.

Perhaps we do not accomplish as much in the neurotic cases as we had expected in the early days of the operation. Only six years ago, when talking with Mr. Tait with regard to the operation for neurotic cases, he dismissed it with one of the peculiar methods which he has of dismissing things which he does not care to talk about, saying that he never touched those cases. Yet, in his address delivered at Edinburgh this year, he says he has been operating on this class of patients the past year or two, and that he is getting very much better results than he had supposed he would; hereafter he would operate much more in neurotic cases. Now, if we do not obtain all the results which we may have expected in these cases, yet they are such as to justify



us in operating (although we cannot make out by physical examination disease of the tubes and ovaries), provided that the patients continue to suffer at and about the menstrual period, after all else that can reasonably be done has failed to give relief. My own experience testifies to the propriety of this advice. Now, I do not believe in the idea advanced, that we are to treat these patients four or five years, to employ every kind of treatment that ever has been adopted for pelvic disease, in order to find out what our case is. We do not observe this kind of logic in anything else in medicine. To dilate, curette, tampon, use iodine, glycerin, and everything else, to put the patient in bed, to diet her, to do all sorts of things with the hope that after a time we shall cure her, when we do not know what the trouble is—I do not believe in that sort of medicine, or experimentation.

DR. H. C. COE, of New York.—I shall be very brief, because I have already written considerable on this subject. It is one in which I have taken a deep interest. I believe that no great principle in gynecology will ever be settled except by reference to actual anatomical demonstration, either at the dead-house or on the operating table. Any attempt to settle disputed points through mere theorizing will certainly not stand the test of time.

I have sought to take up certain definite points with regard to the ultimate results of laparotomy, and to work these out. They have related principally to persistent pain and hemorrhage. Dr. Reamy has evidently observed a class of cases in which the results were somewhat different from those met with generally in hospital practice. I was struck by what Dr. Baldy said yesterday, that every man who was extensively engaged in gynecological practice in Philadelphia had had patients come back after laparotomy—one, two, or three years—with the same pains and troubles from which they had suffered before. This is certainly the experience of many of us in New York. Men engaged in gynecological work in the out-door departments have a better opportunity to observe this than the operators themselves. Now, what sort of cases are these? Most of them are of the class described by Dr. Wylie, as forming a considerable proportion of his operations—where there were adherent tubes and ovaries; in other words, cases of pyosalpinx and oöphoritis,

in which the operation was a difficult one, a large bleeding surface being left behind—in which it was frequently necessary to drain, also to tampon with iodoform gauze. In this class of cases the formation of secondary adhesions is almost inevitable. As I have sought to show, the occurrence of these adhesions will explain a number of the phenomena observed after the operation, especially persistent pain and persistent hemorrhage. I think, however, that true menstruation, after the removal (or supposed removal) of the tubes and ovaries is certainly rare. But I have frequently noticed persistent, profuse uterine hemorrhage. One woman I operated upon twice subsequently, in order to find out the cause of the hemorrhage, but it was impossible to discover anything beyond firm adhesions. These adhesions would re-form after every operation, in spite of all that could be done. Another surgeon had operated before me. Several nodules were removed from the stumps each time, with the expectation that they might contain ovarian tissue, but none was found. These facts have further been confirmed at the dead-house. It would seem, then, that the persistent hemorrhage is commonly due to the pelvic congestion induced by adhesions; it may be due, as Dr. Wylie has suggested, to cysts of the broad ligament. In a considerable proportion of cases in which hypertrophic endometritis was present before the operation, or developed subsequent to it, the uterus does not undergo the ordinary atrophy. But the subject is a wide one, and cannot be covered in a brief discussion.

DR. REAMY.—Dr. Johnson and Dr. Wylie seem to have misunderstood my statement with reference to the operation for hemorrhage and for the arrest of growth of fibroid tumors. Dr. Johnson explains the failure to get good results in some of my cases, on the ground that I practised the operation where the tumors were too large. Dr. Wylie seems to have fallen into the same error. I stated in the paper that I excluded from this operation all cases where the tumor had grown to the size that the uterus with the tumor rose above the level of the umbilicus.

As to the question of removing the appendages for other causes, my friend Dr. Johnson seems to treat lightly the question of unsexing women. He uses the old argument that they

are partially unsexed by disease, and its completion by the surgeon is a matter of no moment. This is not in accord with the sober, dignified, and philosophical utterances that we are accustomed to hear from that gentleman.

In extreme cases, where the disease has unquestionably unsexed the woman, we should, of course, not hesitate, especially if there is a fair prospect of cure by the operation. But this should not warrant removal of the appendages in cases which would in time recover of themselves, or could be cured by other appropriate treatment. The destruction of the physiological capacity of these organs by disease is often assumed by the gynecologist with a trend for operating, on wholly inadequate evidence.

In the same line of slight misapprehension were, I think, the remarks of the gentleman from Portland, Dr. Gordon, during his criticism of the President's address. The President is quite able to take care of himself, but I am gratified to know that on the question under discussion we occupy common ground. I shall be pardoned for calling attention to the fact that the brief and unpretentious paper just read offers statistics of the largest number of cases, followed from two to five years after operation, yet given to the profession by any operator, so far as I am aware.

We have unlimited numbers of cases reported, showing operation, pathological conditions, recoveries from operation, with immediate results. But we have very little as to ultimate results. Of course, if I had included all my operations made within the time covered by my report the list would have been much larger. But only those whose subsequent history is known to me are included.

If my report proves anything it is not simply that forty patients were cured. This is proved, and the result is to me gratifying. But, in the same court, I am convicted of having removed the appendages from patients who would have been better off had the operation not been done. Some of them would probably have recovered in time without treatment; others would certainly have recovered under more conservative treatment, which would not have unsexed them; and others (I am glad to believe, of these there were few) were unquestionably made worse by treatment.

Successes and failures must be compared, in order to arrive at

the truth regarding the value and scope of the proper application of any plan of treatment. In the summing up of my paper it is alleged that the operation under discussion is done too frequently. I frankly confess my own measure of guilt in this matter in the past, but I am always trying to learn by experience. I shall do better in the future. I shall certainly be more cautious in excluding improper cases. Of course, I believe most heartily in the operation, and shall promptly do it when pathological conditions clearly seem to justify it.

It is now my firm belief that, take the cases at large subjected to this operation in this country, at least one-half of them are errors—they ought not to be so treated. One cannot speak nowadays of the objection that an unsexing operation should not be done without serious cause, unless he has made up his mind to disregard the silly charge that he is “talking sentiment, not science, that physicians should have nothing to do with sentiment, it is beneath their dignity,” etc. Gentlemen may make their criticism much as they choose; it will not influence me. In this matter we owe a duty of the highest character to the individual and to society. It is a crime to remove the appendages, except for otherwise incurable disease.

To cure disease and to prolong life are not the only duties of the physician. He must also consider what he may add to the sum total of human happiness. Thus, he must not mutilate the body when he can avoid it. One of the ennobling and God-appointed objects of matrimony is the propagation of the race, and the possibilities of maternity even in the invalid wife adds to her strength of endurance and gives her patience under affliction, and sometimes hope gilds with fringes of light otherwise black clouds of despair. Thus she is elevated, and additional charms are added to the marriage relation. Though she may know that she is at present sterile consequent upon disease, she is not cut off from hope. Remove her appendages and all is changed.

DR. JOHNSON.—Dr. Reamy has misapprehended entirely what I had intended to say. I did not intend for a moment to flipantly deal with the subject as he has stated. I only referred to the question of the number of cases in which the sexual appetite was affected after the operation, and the number in which it had been previously destroyed by the disease.

DR. REAMY.—Dr. Johnson is right. He is always right. I must have misunderstood his position, and am glad to correct myself in that regard; but my misconception of his position has afforded me an opportunity to criticise what I believe to be serious errors.

In reply to Dr. Wylie: I have no doubt of the success which he has in the removal of the entire ovaries and tubes in every case. His immense experience in this direction, together with his extraordinary skill, enable him to do this operation thoroughly in every case. I am inclined to the opinion that I would fail in fewer cases now than in the past, that I have made some improvement. Nevertheless, last year I operated on one case in which I found myself unable to remove the tubes and ovaries, and in another case I could not find one of the ovaries at all. I do not think that it was there, but that it was entirely destroyed by disease.

That I may be understood on another point, I would say that in the paper I stated that repeated and long-continued hemorrhages are different from menstruation. I do not believe that any woman menstruates after her ovaries have been thoroughly removed. She may bleed from a uterine tumor, from a polypus, from endometritis, or from various causes, but it is not menstruation, because it is not a physiological condition.

# THE INDICATIONS FOR LAPAROTOMY IN THE TREATMENT OF THE PUERPERAL FEVERS.

BY RICHARD B. MAURY, M.D.,  
*Memphis, Tenn.*

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NOTWITHSTANDING our advanced knowledge of the principles of antiseptic midwifery, and the immense practical benefit derived from their application in lying-in hospitals, it is doubtful if the mortality from puerperal sepsis in private practice has been very materially lessened.

At the May meeting of the German Gynecological Society held at Bonn,<sup>1</sup> J. Veit declared that the discussion showed that the rate of mortality in the Maternities in Germany is undoubtedly much lower than in private practice.

Death from puerperal diseases is so common that our anxiety for the lying-in woman is no less now than it was ten or more years ago. Just at this time, we are studying with deep interest the applicability of laparotomy to the treatment of the puerperal fevers. We are concerned to know the clinical features which in any given case shall decide for or against operation.

Charpentier's<sup>2</sup> classification and description of puerperal fevers is so strictly according to nature, and is so graphic and concise, that I utilize it here in order to bring the subject before you.

<sup>1</sup> The American Journal of Obstetrics, August, 1891.

<sup>2</sup> A Practical Treatise on Obstetrics. Wm. Wood & Co.

These fevers are divided by this author into two great classes :

First. Those which are almost always recovered from.

Second. Those which almost certainly kill.

“The first are frankly inflammatory, with a tendency toward localization, and retaining the character of a simple inflammation.

“The others are strikingly infectious in character, reacting on the entire economy, and accompanied by diverse manifestations in organs more or less remote from the starting-point of the infection.”

I. Under the first class are placed those cases which begin as a metritis, with extension of inflammation to the appendages, and a resulting pelvic peritonitis.

Some of these terminate by *resolution*, which occurs very slowly and requires a number of months for its completion.

In others *suppuration* ensues, pus breaks through into the vagina or rectum, and recovery may soon follow ; but often there are many recurrences of inflammation and reaccumulations of pus, and a very long time elapses before convalescence.

In not a few the patient dies exhausted by hectic.

II. Under the second class are placed cases of *putrid infection* from decomposition of placental remains, shreds of membranes, clots in the uterus, gangrenous eschars in the vagina or uterus.

Also cases of purulent infection, accompanied by the same general and local phenomena as in the case of purulent surgical infection, with metastatic abscesses and emboli.

Lastly, pure septicæmia marked by intense blood-poisoning, in which all the structures of the body are simultaneously invaded, but there is no proper localization.

III. On the border-line, as a connecting-link between these two great classes—between the purely inflammatory, on the one hand, and the deadly forms, on the other—Charpentier places peritonitis, puerperal metro-peritonitis.

This, ordinarily, is the result of true infection and usually

ends in death, though not always. These border-line cases perplex us most in deciding the question of operation; and it is in this class that the results of surgical treatment have been most discouraging.

The observance of such a classification as this will simplify our inquiry.

CLASS I. *Question of Operation.*—It is certainly not difficult to recognize, clinically, the conditions described in the first class. The vaginal culs-de-sac are bulging; there is evidently pelvic peritonitis; the uterus is fixed, and on its sides are exudation masses.

The clinical history of these cases is hardly that of *sepsis*, although it is common to designate the entire class of puerperal fevers as septicæmia. A prominent feature of these cases is *localization* of the disease.

Senn remarks, in his *Principles of Surgery*: "A great deal of confusion has recently arisen in the use of the terms *septic* and *suppurative* peritonitis. Etiologically, they are identical; clinically, they differ in so far that septic peritonitis is generally diffuse and leads to a rapidly fatal termination, while *suppurative* peritonitis is more frequently circumscribed and more amenable to surgical treatment. Both forms are caused by infection from pus microbes."

Up to this time, only a small number of successful laparotomies have been reported for the puerperal inflammations belonging to this class; and so far as I have been able to learn, the successful operations have been limited to this class.

Dr. Joseph Price<sup>1</sup> has reported four such cases. They all come within the category of the first class: the appendages were diseased; the lesions were pyosalpinx, gangrenous tubes, ovarian abscess, suppurative peritonitis from leakage of pus.

Section, removal of appendages, irrigation, and drainage saved all. These operations were done on the thirty-fifth,

<sup>1</sup> Ectopic Pregnancy and Puerperal Peritonitis. Philadelphia.



twenty-first, twelfth, and twenty-eighth days, respectively, after delivery.

Dr. Edwin Walker<sup>1</sup> has reported three cases, two of whom were primiparæ. In both these, a tumor the size of a lemon was found on the right of the uterus, between five and six weeks after labor. Median incision revealed a large tube, ovary, and coil of intestine bound together by adhesions, and in the centre of this mass, two ounces of pus. In the third case the tumor reached as high as the navel. It could not be reached by median incision, and was opened and drained through the groin.

I also have saved one case, profoundly poisoned and evidently about to die.

CASE I.—A healthy multipara had, on December 12th, an anencephalic fœtus.

Severe hemorrhage following delivery of the afterbirth necessitated the introduction of the hand into the uterus twice. There was moderate fever on the second day, which after a week increased in severity, and was accompanied by pain requiring opium. The lochia were very offensive.

Fever continued; sweating was marked; the pulse was very rapid; temperature fluctuations were great; pain persistent; abdominal distention prominent, with the formation of tumor.

I saw the patient on January 13th, thirty-two days after delivery. The pulse was 140, axillary temperature  $103\frac{1}{2}^{\circ}$ . Exhaustion was extreme, the face purple, the surface being covered with sweat. On the right side of the uterus a tumor extended from the groin to the level of the umbilicus, and slightly overlapped the linea alba on the left. Median incision showed the omentum and intestines adherent and covered with lymph. On separating the adherent coils of intestine over the tumor, a pus cavity was opened. The pus, fecal in character, being removed by sponges, and the abscess-cavity further explored, the fingers passed easily into a second cavity which was quite certainly the right Fallopian tube.

<sup>1</sup> St. Louis Med. Mirror, July, 1891.

The patient's condition forbade any attempt at enucleation of the appendages, or further disturbance of intestinal adhesions. The cavity was cleansed by irrigation and packed with gauze.

Fecal pus and feces were discharged for ten days, and the gauze-packing was not entirely removed for two weeks. The wound was healed in five weeks. Three months after operation no evidence of pelvic disease was appreciable, save a small area of cicatricial induration in the region of the right tube.

All the cases here reported, which I prefer to speak of as suppurative peritonitis, are marked by localization and limitation of inflammatory products. They were all operated upon at a late period after delivery.

The operation in these cases must be a hurried, and in one sense an imperfect, one. As Price says: "It may be impossible, owing to the condition of the patient, to remove the diseased appendages which are directly concerned in the pathological process, and secondary operation may eventually be necessary to effect a cure."

I believe it is in the cases belonging to this class that we shall find our surgical opportunity.

CLASS II.—The question of operation cannot be a debatable one in any of the varieties mentioned in the second class. In this the condition is that of general septic infection. There is no localization of disease. If pus form, it is found in multiple deposits. There may be a late development of peritonitis, but this would not justify a laparotomy. To justify laparotomy there should not only be evidence of intra-peritoneal disease, but we must feel sure that it is the principal disease.

CLASS III. *Puerperal Peritonitis*.—This is septic peritonitis, and follows quickly upon delivery. It has been arbitrarily divided into "very acute," "acute," and "chronic."

The "very acute" usually terminates in death in from thirty-six to forty-eight hours.

The "acute" form usually terminates fatally within a week.

The "chronic" has not a well-defined course, and may end in recovery.

On March 13, 1888,<sup>1</sup> Dr. Thomas Savage removed the ovaries from a multipara six days after labor. She had developed feverish symptoms three days after labor, and when operated on had a temperature of  $103.5^{\circ}$ , was verging on delirium, and had all the symptoms of peritonitis, with swelling and fluctuation of the abdomen, and diarrhoea. The intestines were adherent with recent lymph, and nearly a pint of non-offensive, purulent fluid escaped. The ovaries were enlarged and black. The case was reported the day after operation, and the result was not made known.

Dr. Savage remarked that "the operation, when done for puerperal peritonitis, had not been so successful as when performed in other cases, but it was important that they should go on operating."

March 21, 1888,<sup>2</sup> Mr. Tait reported two operations for puerperal peritonitis.

In one case peritonitis resulted from a gangrenous parovarian cyst which had been punctured through the rectum to make room for the passage of the foetal head. Inflammation supervened on the fourth day. On the eighth day, removal of cyst; irrigation and drainage. Death.

In the second case, a primipara, peritonitis developed on the fourth day. Operation on the eighth day after labor. Three pints of stinking, purulent serum evacuated. Death.

The writer emphasized the statement that opening the abdomen and draining may help us immensely in reducing the fatal results; *but if it is to be of use, it must be early.*

After somewhat careful search, I find no record of successful results from operations done for puerperal peritonitis, not localized.

My own experience has been discouraging. With me, the

<sup>1</sup> British Gynecolog. Journ., May, 1888.

<sup>2</sup> Annals of Gynecology, June, 1888.

indication for operation in each case was *peritonitis*. The operations were done late.

CASE II.—A primipara, aged twenty-two years, was delivered by forceps. Forty-eight hours later there was a rise of fever, which continued with remissions for eight days, the temperature not going high.

On the ninth day there was a chill, with great pain, and the temperature rose to 103.5°. I saw her seventeen days after delivery. She then had abdominal peritonitis. The pulse was 120; respiration 50; temperature below normal. She had been taking, unadvisedly, 10 grains of phenacetine every three hours. To the left of the hypogastrium there was pain, and slight dullness on percussion, but no tumor or resistance. The uterus was anteverted and immobile. No exudation appreciable either in the pelvis or on the sides of the uterus.

The abdomen was opened immediately, February 4th. Evidences of peritonitis were plain. On separating the feebly adherent intestinal coils on the left side, an ounce of pus welled up. The left ovary and tube were bound by weak adhesions and covered with pus. They were removed. The tube was filled with pus. The ovary and tube on the right side appeared to be healthy, and were not removed. There was no evidence of pelvic cellulitis. The upper abdomen was examined as carefully as could be through a short incision.

No other pus-collections being discovered, the peritoneum was irrigated and a glass drainage-tube, packed around with iodoform gauze, was inserted.

The symptoms of peritonitis rapidly subsided. The pain, the abdominal distention, and the nausea disappeared, but the patient did not improve. The respiration rose to 56; the pulse varied from 120 to 130. Delirium supervened; the skin turned yellow; the tongue was hard, dry, and brown, and she died February 7th, apparently from septicæmia.

CASE III.—A primipara, aged twenty-one years, was confined with a natural labor January 22d. The usual means for moving the bowels failed until the eighth day, when she had a chill and symptoms of slight dysentery, three bloody mucous discharges

in all. Fever subsided after twenty-four hours, but the bowels were disordered and loose.

A week later there was a second chill, and pus began to be discharged from the bowels. Fever continued, and symptoms of peritonitis appeared.

My first visit was on February 14th, when her condition was critical. The conclusion had been reached in a previous consultation that medicine could not help her, and the question was raised whether surgical interference offered any hope.

At this time the pulse was 120; temperature  $102\frac{1}{2}^{\circ}$ . The entire abdomen was distended and tympanitic. No fluctuation, no tumor.

On account of abdominal distention, the bimanual was unsatisfactory, but there did not seem to be any exudation in the pelvis.

Severe paroxysms of pain, especially during movements of the bowels, necessitated full doses of opium. These movements occurred every three or four hours, and consisted of pus to the amount of about four ounces each time.

The indication for operation was *peritonitis*. The uterus and appendages and the vermiform appendix were found to be healthy. There was no exudation in the pelvis. The sigmoid flexure was much enlarged, was inflamed, was extensively adherent to adjacent intestinal coils, and its surface was traversed by numerous enlarged bloodvessels.

Adhesions were everywhere gently broken, the cavity irrigated with hot water, and the incision closed without drainage.

Very perceptible improvement followed in the pulse and temperature, and the symptoms of peritonitis disappeared. There was a return of appetite, and light, solid food was administered. The frequency and painful nature of the intestinal movements were lessened. Recovery from the operation was rapid.

But the improvement did not continue; the large discharges of pus returned; the fever rose higher than before, and the highest temperatures,  $103^{\circ}$ ,  $104^{\circ}$ , and on one occasion  $107^{\circ}$ , were observed between midnight and morning. She died of exhaustion, April 12th, nearly two months after the laparotomy.

This is an anomalous case, but it is one of the clinical pictures presented by the puerperal state, and is possibly one

of puerperal sepsis—ulcerative processes in the descending colon probably causing the peritonitis.

Whilst considering the question of laparotomy for puerperal peritonitis, we are required to know that ancient disease of the uterine appendages is at times an important factor in child-bed mortality.

Dr. William Chapman Gregg first drew attention to this in 1886 by reporting four cases<sup>1</sup> dying in Queen Charlotte's Hospital, of supposed metro-peritonitis. Their clinical histories differed in no material points from those of ordinary puerperal fever, and it was only through the autopsy that the discovery of old disease of the appendages was made.

The pathology of these cases is so important that I will briefly report it :

CASE I.—Peritonitis supervened during labor, caused by the rupture of an ovarian cyst, situated in Douglas's pouch and obstructing the passage of the child.

CASE II.—Abscesses of the ovary and pyosalpinx shown at the autopsy, and collections of pus behind the peritoneum, connected with a ruptured ovarian abscess.

CASE III.—Acute general peritonitis due to rupture during labor of a thin-walled ovarian cystoma with clear contents.

CASE IV.—Chronic inflammation of the broad ligaments drawing the uterus high up, making thereby pressure on the ureters and causing disease of the kidneys. Fever and eclampsia.

In this and preceding cases the uterus was healthy.

CASE V.—Death of a primipara thirteen days after labor. There was old peritoneal disease. Extensive adhesions. Involution processes set up inflammation. Suppurating cellulitis ruptured into the peritoneum and vagina. Purulent accumulation in pleura, and blood-stained serum in the pericardium. Uterus, ovaries, and tubes healthy.

CASE VI.—A multipara died of purulent peritonitis six days after labor. Uterus healthy. Recent and old peritonitis. An old abscess cavity found outside the utero-vesical peritoneal fold,

<sup>1</sup> Brit. Med. Journ., November, 1886.

communicating by one opening into the peritoneum, by another into the vagina.

Here, then, we have a most important class of cases in which peritonitis is due to old disease of the appendages rekindled into activity by labor or the processes of involution.

This is the experience of but one observer. How greatly might it be varied and multiplied if autopsies were common in puerperal cases. The symptoms present in these cases are essentially those of puerperal peritonitis, and it is impossible clinically to separate cases having such an origin from others in which there is a general septic infection incurred through wounds in the genital passages.

The prognosis after operation in such cases as Dr. Gregg reports will presumably be much more favorable than in cases of puerperal metro-peritonitis, provided operation can be done early.

Outside of these we have but little to hope from laparotomy, because the peritonitis is merely a local manifestation of a general systemic infection.

Inasmuch as we are unable to tell beforehand with which class we may have to deal, we may properly follow the advice of Mr. Tait, and open the abdomen in every case of acute puerperal peritonitis, if we can do it early. By this means we will be sure to save some lives.

Late operations are certain to be followed by the loss of the patient, and to bring reproach upon our art.

## DISCUSSION.

DR. A. J. C. SKENE, of Brooklyn.—I have had no experience with laparotomy for acute post-partum inflammations, pelvic or abdominal. I have, however, followed the literature, and I think the most valuable portion of it has been given by the author. It seems to me that he has definitely settled the question that where there is localized inflammation and pus accumulation laparotomy is undoubtedly the best treatment.

The results have so far showed, and will still further prove that it is the most reliable treatment. But in general post-partum peritonitis the results so far have been rather unsatisfactory, and I think that it is what we might expect. But that we could secure sufficient drainage to relieve the patient from the general sepsis already existing and increasing, and tendency to prove fatal, as it usually does, I think is more than doubtful.

The subject is one which is rather new, and one well worthy—yes, more than worthy—of consideration, and I think the paper has introduced it in a most admirable manner, and I fear that anything which I might say would really detract from the value of the paper.

DR. WILSON, of Baltimore.—I, like Dr. Skene, have had no personal experience with this operation; but I have listened to the reading of the paper with a great deal of interest. It has shown that where there is a local inflammation or an abscess we should open the abdomen and drain. In the cases seen late, where there is general peritonitis, I suppose a man would be justified in opening the abdomen and washing it out. But in the majority of cases, it seems to me, it would not save the patient. That is the impression which I had before obtained, and I think Dr. Maury's paper led up to that view.

DR. W. GILL WYLIE, of New York.—This subject has been one of extreme interest to me. Since my appointment as visiting surgeon to Bellevue Hospital, I have seen a great many of these cases of trouble after labor, and have been almost compelled to make a study of the subject. I would agree with the writer except with regard to one or two points. I long ago came to the conclusion that these cases are simply cases of sepsis, and if treated in the beginning almost all are curable. I mean that by looking upon the condition in the beginning as a local disease, and therefore thoroughly washing and draining the uterus, almost all the patients can be cured and further trouble avoided. When I first went to Bellevue during one winter, of nine cases of well-marked puerperal fever we were able to cure seven simply by washing out the uterus *every hour* until the temperature fell.

As to the class of cases to which the author has specially referred, in which laparotomy may be done, I believe with him that



the difficulty is that, when the laparotomist sees the patient, her condition has usually become a hopeless one. But I am also satisfied that they may be prevented from coming to that pass. Undoubtedly where the poison is localized the cases are comparatively easy to manage. The rule which we adopted in Bellevue Hospital, when patients came in with high temperature and symptoms of puerperal fever or sepsis following labor or abortion, was to first wash out the uterus. That would keep the temperature down, and nearly always effect a cure. When it failed, almost without exception we would find one of two conditions present, either that the poison had penetrated into the connective tissue and effusion could be localized in the pelvis, or that general peritonitis was present. In a number of cases we succeeded in finding phlegmons or broken-down tissue in the broad ligaments. In others of a much more chronic type we would find abscesses within the peritoneum—at least a great many of them would be within the peritoneum. In the only case in which I had the opportunity to open the abdomen for general acute or subacute peritonitis following labor, I was prevented from operating until the case was extreme. There was found at least a quart of pus. The patient was benefited for a time, but died. I am satisfied, however, that if the abdomen had been opened earlier the patient would have lived. The difficulty is in getting consent to operate early enough.

Last winter I saw a case in which sepsis had developed soon after labor. It had been considered a local cellulitis by two eminent gynecologists, but instead of remaining localized the poison had broken through the sac and spread until it had formed a phlebitis extending down the right leg. When I saw the patient she was in an extremely critical condition. Her temperature almost every day went up to 104°, it was seldom below 102° F.; she had repeated chills and the leg was much swollen. The question arose, could we do anything by surgery? I saw the case with Dr. Blumenthal and Dr. Jacobi, and two or three other gentlemen. I advocated an operation, believing that we might reach a collection of pus, get rid of it, and relieve the patient; if we did not find pus, we might in some way relieve pressure, obtain an outlet for the poison, and cure the patient.

The operation was performed: I cut down, examined the pelvis, found it free; there were no signs of peritonitis except as evinced by some thickened tissue along Poupart's ligament on the right side, about where we would expect the vein to enter the leg. I went down upon the broad ligament, pushed up the peritoneum, pushing my finger well down into the broad ligament, seeking for an abscess, but could find none. I went deeper, and instead of finding pus, found a dark, thick material. A drain was introduced, this matter oozed out, the temperature fell, and after a long process of suppuration in the leg, which was incised, the patient finally made a complete recovery.

DR. H. J. GARRIGUES, of New York.—A number of years ago I wrote an article about the opium treatment in puerperal peritonitis, based on a personal observation of thirteen cases of general peritonitis in puerperal women, of whom seven recovered. Over 50 per cent., it will be seen, recovered. Since that time I have performed one laparotomy for general purulent peritonitis, which ended fatally. I now never see such cases in my own practice since adopting strict antiseptic management. In all the cases which I have been called upon to see after the peritonitis had developed in the practice of others, I have advised medical treatment as opposed to laparotomy, based on the fact that over one-half of even bad cases recover by medical treatment.

DR. C. C. LEE, of New York.—I have listened with great interest to the reading of Dr. Maury's paper—a paper which has been very carefully drawn up, and will constitute a landmark in a department of laparotomy deserving some of that attention which has lately been given too exclusively to removal of the uterine appendages. As I understood the author in summarizing his paper, he divided all cases of puerperal peritonitis in which laparotomy might be considered into two classes: 1. Putrid cases, or cases practically hopeless; 2. Cases of moderate septicæmia, the peritonitis developing subsequent to local disease in the pelvis. But he also drew in another part of the paper the discouraging conclusion that it is impossible clinically to distinguish those two conditions, and therefore laparotomy in all cases of peritonitis was to be attempted, or at least considered, as a last resort. Now I have seen a number of apparently hopeless cases get well under ordinary means, and therefore I do not feel

able to endorse the recommendation made by Mr. Tait and accepted, as I understood him, by my friend Dr. Maury, to perform laparotomy generally in the treatment of such cases. If the case presented evidence of a suppurative condition, as distinguished from general septicæmia (and we should try to make that distinction at an early period), then an operation would be proper. How are we in practice to distinguish between those two classes of cases? I think, in a general way, thus: All cases of septic peritonitis approximate more or less closely the typho-malarial type of disease. That is to say, they have their recurrence as to high and low temperature, they have their recurrence as to sweating, they are commonly better in the morning, getting a good deal worse in the afternoon, when they also have a rise of temperature. This periodic course is marked from the outset to the end of the disease. In cases of suppurative peritonitis, properly speaking, there is a certain blunting of the nerve-centres to pain. And this blunting of the nerve-centres may be attributed to the rapid accumulation of pus in the abdomen. The swelling is due not so much to tympanites as to accumulation of fluid in the belly. One can infer with more or less certainty the existence of pus from that grade of symptoms. I have seen several of this latter class, and in two at least the belly was opened. I do not say that they were putrid cases, for they were not; but they were partly of the septic type, and both patients lived. One case occurred in the practice of Dr. Dawson, who consulted me, and we opened the abdomen, which was nearly ten years ago. The other case was in my own practice. They were both puerperal suppurative cases where there had been disease in the appendages originally, but the appendages had not ruptured and were not removed during our operation because there was no indication for it. While they were somewhat enlarged and swollen, they were not so diseased as to call for removal. The patients have had no relapses.

In all cases of true septic peritonitis I think it is fruitless to open the abdomen. The peritonitis in such cases is but a symptom of the general condition. No matter how well you may wash out the cavity, no matter what you may remove from it, the patient, as far as the records go, dies just the same. But if the case should

not show those intermittent symptoms—that is to say, if it be a truly suppurative case of peritonitis—the happiest results may follow laparotomy. Besides the cases reported in the paper, Mr. Frederick Treves, of London, has put several on record. Dr. J. C. Reeve read a most interesting paper on the subject before this Society about four years ago. Certainly Dr. Maury's paper adds very materially to our knowledge of the subject.

DR. H. T. HANKS, of New York.—I feel that the paper is one of vast importance. We are just on the border-line of knowing what to do in these cases. Ten years ago we would not have dared to advocate what many do to-day in attempting to cure bad cases of puerperal peritonitis. During the next five years we shall make greater progress in establishing certain rules as to what is best to be done. A few points are already understood. When we know in puerperal peritonitis the source of entrance of the poison, we proceed at once to treat that condition; if there is a lacerated cervix, we cauterize or repair it; if there is retention of a portion of the placenta, we remove that, and so on. Some of these facts we had been taught ten, fifteen, or twenty years ago. But there are cases of local peritonitis which come under our notice from time to time, in which, after giving a saline laxative and resorting to certain general and local measures, we do not feel assured that the profession will sustain us in operating by laparotomy. Can we do more or better than to follow the recommendation made in this paper to open the abdomen? It is not pleasant to make use of the aspirator in order to locate the trouble, and, failing to draw off pus, have the only safe course, laparotomy, refused to us. If pus is withdrawn with the aspirator, knowing its exact location, you can and must cut down directly upon the tumefaction. Many times puerperal women have an abscess which can be reached without going into the peritoneal cavity. I have seen several such cases. But when it comes to peritonitis without evidence of the pus being localized in the pelvis, it is more difficult to decide what to do. As bearing on this point the paper is very instructive. When, in spite of saline or opium treatment, the pulse continues to go up and the temperature mounts, it is evident that the patient must die, and she cannot be worse off if an operation is done. I think an

operation should be done earlier than we have been permitted to operate in the past. After more experience in this direction we shall know better in which kind of cases the abdomen should be opened. I thank Dr. Maury for his instructive and judicious paper.

DR. SKENE.—In stating that I had had no experience in such cases, I meant that I had had no experience with laparotomy in acute septic diffuse peritonitis. In circumscribed peritonitis, and in the class of cases referred to several times during the discussion, I have had as large experience as perhaps any man of my age. In cases of circumscribed peritonitis, although we may not be able to determine the presence of a collection of pus by the aspirator, yet laparotomy is both justifiable and gives excellent results. When I first spoke, my remarks were intended to be limited to cases of acute diffuse septic peritonitis, in which condition I have had no experience with laparotomy, and it is for us to decide how far laparotomy may prove useful in cases of that variety.

# A STUDY RELATIVE TO THE FUNCTIONS OF THE REPRODUCTIVE APPARATUS IN AMERICAN INDIAN WOMEN.

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## I.

A CAREFUL examination of the Indian question as it is presented to the people of the United States must lead to the conclusion that the Indians must submit either to civilization or extermination. It matters very little that the aggregate Indian population may not be materially less, as some assert, than it was a hundred years ago; the fact remains that where civilization and savagery have come into close contact, savagery has been obliged to yield. With the frontier towns closing around them, the game disappearing or already gone, railroads and telegraph lines intersecting their reservations, the Indians cannot lead an isolated life, however much they prefer it. If they fight, they will surely be defeated. What plan could be more reasonable than for them to dispose of their surplus lands to the Government, abolish tribal distinctions, accepting lands in severalty, submit to the educating influences of the Government schools and the religious organizations, which are at work among them, and become citizens? This is the present policy of the Government, and it seems eminently wise, just, and hopeful. If it be urged that the land belongs to the Indian by right of prior occupation, and that it is for him to say whether he shall give it up or not, and whether he shall continue his indolent,

useless life, it must be replied that it is the law of Nature and of economics alike that lower conditions be displaced by higher ones, and though such a law seems hard-hearted, it is not so in the long run. It is thus that States and Empires are established, and would be proper enough did not the greed of the stronger usually lead to unfair and unjust treatment of the weak.

Since it is probable that great changes in the social condition and surroundings of the Indians will take place in the next few years, it is evident that now is the time, if ever, to investigate the influence of savage life and surroundings upon the functions of the reproductive apparatus of the women. Comparisons can also be drawn with those who have emerged from savage life, or are in the transition period. Such an investigation has been made during the past year with the coöperation of the honorable Commissioner of Indian Affairs, General Thomas J. Morgan, the late Surgeon-General Dr. J. D. Baxter, and his successor, Surgeon-General Dr. Charles Sutherland. It is needless to say that without their assistance and approval, the investigation could not have been made. A circular-letter expressing the object of the investigation, and the approval of the Indian Commissioner, with blanks containing a series of printed questions, was mailed to each of the fifty-three Indian agents employed by the Government, with the request that they would hand them to the agency physicians,<sup>1</sup> and request them to obtain the desired information. Further assistance was rendered by Surgeon-General Baxter, who notified the army surgeons at twenty posts to gather such information upon the subject in hand as was possible.

It would be no easy matter to fully describe the difficulties which attended the gathering of these data. Experienced

<sup>1</sup> The Government employs one or two physicians at each agency to look after the physical condition of the Indians. The work is very arduous, for some of the reservations cover many miles of territory, and the pay is small.

army surgeons, who had served many years in the Indian country, stated that such data as I desired could not be obtained, and in only a few instances were they, in fact, obtainable at the army posts. From twenty of the Government agencies no response was received; from nine others the information was so meagre as to be of little value. The basis of this paper consists of information which was obtained mainly from twenty-eight agencies and army posts. I now desire to publicly thank Generals Morgan and Sutherland for their kindly interest and courtesy in this matter, and also all the gentlemen who have furnished me with the information which I have endeavored to arrange. The expressions of fraternal and professional sympathy from many of my correspondents was very delightful, and I feel a deep sense of obligation for the pains and trouble which were taken in my behalf.

The difficulties in gathering this information were manifold. In only a few instances did the records of the offices of the agency physicians give any light upon the subject. The Indians, with the exception of a few tribes, are densely ignorant, and, in many cases, would be unable to grasp the ideas embodied in the simple questions to which I desired answers; besides, they are reticent, suspicious, and superstitious.

Comparatively few of the older women understand English, and an interpreter intelligent enough to put the questions was not always available. In some tribes a sign language is used, and one who could interpret the spoken language might be of no assistance if the sign language were required. But these were minor obstacles, for it was stated again and again in the communications which I received that Indian women, as a rule, never talk about their genital organs, even to each other, and to speak of such subjects to a man, most of all to a white man, would be a shock to every notion of Indian propriety. It matters not how degraded or unchaste an Indian woman might be, *this* was a subject upon which she



showed what might be called *native modesty* in a double sense. Furthermore, in some of the tribes the men would not have allowed the women to talk upon this subject with white men, even if the women themselves had been disposed to do so.

But, in spite of all these hindrances and objections, some very interesting facts were obtained relating to Indian women at the following agencies :

Pawnee, Ponca, Otoe, and Oakland (Indian Territory).

Shoshone (Wyoming).

Fort Apache (Arizona), army-post.

Cheyenne and Arapahoe (Oklahoma).

Quapaw (Indian Territory).

Fort Belknap (Montana).

Fort Hall (Idaho).

Neah Bay (Washington).

San Carlos (Arizona).

Sac and Fox (Indian Territory).

Round Valley (California).

Omaha (Nebraska).

Uintah (Utah.)

Santee (Nebraska).

Cherokee (Indian Territory).

Colorado River (Arizona).

Crow (Montana).

Klamath (Oregon).

Fort Du Chesne (Utah), army post.

Fort Gibson (Indian Territory), army post.

Fort Reno (Indian Territory), army post.

Fort Union (New Mexico), army post.

Fort Niobrara (Nebraska).

Flathead (Montana).

Fort Peck (Montana).

Nez Percés (Idaho).

Puyallup (Washington).

Green Bay (Wisconsin).

A few facts concerning the social and physical conditions of the Indians located at these agencies are given in an appendix, which is prepared partly from the written communications which I have received, and partly from the report of the Commissioner of Indian Affairs for 1890.

The social condition is referred to in the appendix as—I. Savage. II. Transitional (*a*, poor; *b*, medium; *c*, nearly civilized); III. Civilized.

With many of those who are going through the transitional period, the physical struggle is peculiarly severe. In most of the tribes the deaths exceed the births. It is hard to think it could be otherwise, if we consider the forces which are at work—bad hygiene, improper food, exposure to the vices and excesses of frontier life. Hence, however benevolent the intention of the Government may be, it is evident that the civilizing process will involve extermination of a large portion of the Indian race, and the gradual amalgamation of the remainder with Caucasian and negro elements.

## II.

The subjects upon which information was sought included menstruation, conception, gestation, parturition, the puerperal period, the menopause, sexual appetite, pelvic diseases, including the venereal and a variety of others of kindred nature.

### DISEASES OF THE REPRODUCTIVE APPARATUS IN CHILDREN.

Concerning diseases of the reproductive apparatus in children no direct information was obtained. The presence of diseases of the lymphatic system, especially scrofula, in many tribes, the general prevalence of venereal disease, and the great mortality among infants, were the only facts bearing upon this question which were ascertained.

## PUBERTY.

Data of considerable interest were gathered upon this subject. This condition is influenced by many factors: climate, habits, hereditary tendency, condition of nutrition, etc.

At Fort Apache (Arizona) it was found impossible to determine the age of the Indians at any period of life, and consequently the age at which menstruation began or ended. At the San Carlos (Arizona) Agency the women (Apaches) refused to answer questions upon this and kindred subjects. At Fort Union (New Mexico) the Apache women held there as prisoners were interrogated with good success by Surgeon-Major Lippincott, U. S. A. Among these women menstruation began as follows:

Number of cases.	Age of first menstruation.
3 . . . . .	10 years.
1 . . . . .	11 "
1 . . . . .	12 "
4 . . . . .	13 "
3 . . . . .	14 "
2 . . . . .	15 "
1 . . . . .	16 "
3 . . . . .	Not known.
<hr/>	
Total, 18	Average age for 15 cases, 12 $\frac{1}{3}$ years.

These data will apply for the great tribe of Apaches, who live as nearly in a state of nature as possible, wearing very little clothing, subsisting mostly on animal food, and inhabiting the warm, though mountainous, climate of Arizona. They are an unusually active and vigorous people.

No data concerning puberty were obtainable by our correspondent at the Cheyenne and Arapahoe Agency. Even the registry of births required by the Government could not be depended upon, and the officers were obliged to "round up" the entire body of Indians at the annual enrolment, as they rounded up the cattle, in order to get vital statistics. Another correspondent was more successful, and from his report the following table was arranged:

Number of cases.	Age of first menstruation.
1 . . . . .	15 years.
3 . . . . .	16 "
3 . . . . .	17 "
2 . . . . .	18 "
1 . . . . .	20 "
<hr/> Total, 10	<hr/> Average age, 17 years.

These Indians are of northern origin, of large frame, and the lateness of puberty is characteristic of their northern habit, though they now live in the Indian Territory.

At Fort Hall (Idaho) Agency the Indians are of the wildest type, and no information could be obtained concerning the menstrual history.

At Fort Belknap (Montana) Agency live the Gros Ventres and Assiniboines. One correspondent referred to their ignorance and unreliability should answers be given to the questions which were put to them. As marriage was often accomplished by the women prior to the fifteenth year, it was supposed that puberty must precede that age. Another correspondent ascertained that puberty came between the twelfth and eighteenth years. These are also northern Indians, living in Montana near the British America line.

At the Santee (Nebraska) and Fort Peck (Montana) Agencies and Fort Niobrara (Nebraska) post are branches of the great Sioux nation, the most powerful among our native Indians. Among them are many excellent types of physical development in women as well as in men. The following data were obtained concerning the age of puberty :

Number of cases.	Age of first menstruation.
1 . . . . .	13 years.
14 . . . . .	14 "
13 . . . . .	15 "
5 . . . . .	16 "
5 . . . . .	17 "
3 . . . . .	18 "
1 . . . . .	19 "
1 . . . . .	23 "
1	Never menstruated, 15 "
4	Unknown.
<hr/> Total, 48	<hr/> Average age for 43 cases, 15.11 years.

Among the Klamath (Oregon) Agency Indians—the Klamaths, Snakes, and Modocs—no attention is paid to menstruation, and they seem to be ignorant as to its coming or going.

Among the Neah Bay (Washington) Indians menstruation begins at about the fourteenth year.

At the Quapaw (Indian Territory) Agency all the children are compelled to attend the Government school. Their homes in many instances are filthy, ill-ventilated huts. Menstruation was said to come earlier with them than with white children, but particulars could not be obtained.

At the Sac and Fox (Indian Territory) Agency menstruation begins from the fourteenth to the sixteenth year.

At the Round Valley (California) Agency the beginning of menstruation is appropriately observed, but the women were too densely ignorant to give any satisfactory data in the matter.

The Utes at the Uintah (Utah Territory) Agency begin to menstruate from the fourteenth to the sixteenth year.

The Mojaves at the Colorado River (Arizona) Agency are densely ignorant as to all matters affecting their age after the sixth or seventh year. A reliable correspondent states, however, that he has seen Mojave girls of twelve with the mammary development of women of twenty-five, which is presumptive evidence that puberty is reached by them at an early age, as it is by the Apache girls, who live in the same hot climate.

The girls at the Nez Percés (Idaho) Agency were believed to menstruate at about the same age as white girls living in the same latitude.

The age at the Puyallup (Washington) Agency was said to be from twelve to fourteen.

The Green Bay (Wisconsin) Indians have been surrounded by civilizing influences for many years, and with them menstruation begins at thirteen to fifteen.

Among the Cherokees—who may be taken as the type of the civilized Indians in the Indian Territory, their ways of

living being nearly identical with those of equally civilized white people—menstruation begins somewhat later than with the whites, and with the full-bloods it begins somewhat later than with the mixed.

From the foregoing it would not appear that savage life *per se* either hastens or retards puberty ; climate, occupation, and hereditary tendency are more potent factors.

#### PHENOMENA AND INCIDENTS OF MENSTRUATION.

With people of filthy habits, as are so many of the Indians, it is not strange that the coming, progress, and going of menstruation should alike be matters of indifference. In only a few instances at only a few of the agencies was there a habit of observing the duration of menstruation. Such instances are the following :

Agency.	Duration of menstruation.
Sac and Fox . . . . .	3 to 4 days.
Apache . . . . .	5 to 6 “
Yankton Sioux . . . . .	2 to 5 “
Puyallup . . . . .	3 to 5 “

What has already been said will prepare one for the statement that there is less variety in the phenomena of menstruation in Indian than in civilized women. With many, perhaps the majority of them, pain during menstruation is unknown. It has been reported as an occasional occurrence, however, from several sources. Thus, among the Gros Ventres and Assiniboines it is not infrequently complained of at the first menstruation, though rarely after that.

In the carefully written histories of 49 Sioux women pain in the iliac region was complained of by 4. Of the 18 histories of Apache women, pain in the loins during menstruation was complained of by 11. Among the 10 Cheyenne and Arapahoe women, there was but one complaint of menstrual pain, the pain being located in the ovarian region. One Assiniboine and 1 Kickapoo complained of menstrual pain

in the head, chest, and stomach. Among the civilized Cherokees menstrual pain was not infrequent. An interesting case is narrated of a woman who waded in the creek while she was menstruating and ever afterward was sick.

Inquiries as to the quantity of blood lost during menstruation elicited few answers, for reasons which have already been given. No great significance need be attached to the following table, showing replies from agencies heard from on this subject :

Quantity of blood lost during menstruation :

Excessive.	Normal.	Scanty.
Crow.	Puyallup.	Neah Bay.
Fort Belknap.		Cherokee.

Only 1 case of amenorrhœa was reported, and that occurred at Round Valley Agency (California), the woman being twenty years of age, very fat, constipated; married four years. Her uterus was one and three-fourths inches in depth, and she had never menstruated. Among people who are accustomed, as are savages, to observe and mark constantly recurring natural events, we should expect that such an event as puberty, with all that it signifies, would be noted by rites and ceremonies. Nor would it be strange that vigorous people with a surplus of physical energy should celebrate such rites in violent movements of some kind or other. Hence arise the so-called dances with which the advent of puberty is celebrated by some of the tribes. Among the Quapaw (Indian Territory) Indians it is the violent "stamp dance" that is performed. At Round Valley Agency (California) the menstruating girl must join in furious movements with older women and keep it up until exhausted, as it is believed that in this way the flow will be promoted and she will be strengthened for sexual and maternal duties. Exhaustion lasting several days may follow such excesses, but fatal cases were not reported.

At the Neah Bay Agency (Washington) a menstruating girl, at her first menstruation, is isolated three days on a

spare diet. At the end of the third day she is stripped naked, taken to a stream, and washed in the presence of her friends and relatives. Then her parents give a *pil pottlach* (giving away of blood), which is analogous to a birthday party, and very disgusting to any but savage perceptions.

### MENOPAUSE.

As menstruation is a matter of indifference with many, perhaps the majority, of Indian women, so is it with the menopause. My correspondent at the Quapaw Agency (Indian Territory) had observed that Indian women do not suffer with the nervous troubles which are so common among white women at the menopause. This was attributed in part to racial differences and in part to manner of life. The case of one Shawnee woman at this Agency was narrated, who began to menstruate at fifteen, was married at seventeen, and gave birth to seven children. At forty-six the menopause began and terminated at forty-seven, insanity developing in the interval.

At the Round Valley Agency (California) it was thought that the menopause came earlier than among the whites, but it gave no trouble whatever. At Fort Reno (Indian Territory) it was observed that the menopause usually came abruptly and without noticeable phenomena. At the Puyallup Agency it was thought that the menopause occurred earlier in Indians than it did in white women, on account of the hard work to which they are subjected. The following table shows ages and duration of the menopause at several of the agencies :

Agency.	Age at menopause.	Duration.
Sac and Fox . . . . .	48	18 months.
Crows and Assiniboines . . . . .	40 to 50	...
Uintah (Utes) . . . . .	40 to 50	...
Apache . . . . .	42 to 53	1 year.
Cheyenne and Arapahoe . . . . .	2 at 46	abruptly.
“ “ “ . . . . .	1 at 49	“
“ “ “ . . . . .	1 at 51	“



Agency.	Age at menopause.	Duration.
Cheyenne and Arapahoe . . . . .	2 at 54	abruptly.
" " " . . . . .	1 at 57	"
" " " . . . . .	1 at 73	"
" " " . . . . .	1 at 50	2 months.
" " " . . . . .	1 at 54	2 years.
Sioux . . . . .	1 at 38	
" . . . . .	4 at 40	1 year in 5
" . . . . .	1 at 43	2 years in 5
" . . . . .	3 at 45	3 " in 1
" . . . . .	2 at 46	4 " in 3
" . . . . .	1 at 47	5 " in 1
" . . . . .	3 at 48	6 " in 1
" . . . . .	1 at 49	8 " in 1
" . . . . .	3 at 50	...
" . . . . .	2 at 51	...
" . . . . .	1 at 52	...
" . . . . .	1 at 53	...
" . . . . .	2 at 58	...

In general, it may be said that the vascular and nervous phenomena observable among civilized women at the menopause are absent in Indians. Malarial diseases were present in the Indian women at Fort Reno (Indian Territory) subsequent to the menopause, but were in no way attributable to that condition. The same may be said of pulmonary phthisis and rheumatism, which developed in two Sioux women after the menopause.

#### MARRIAGE AND SEXUAL APPETITE.

Marriage, the bulwark of civilized communities, is but lightly esteemed among savages. In some of the tribes communism as to the sexual relations seems to prevail. In many of them polygamy is rife, and the Government is striving hard to repress it. Virtue and chastity are of little worth, especially among those Indians who have been brought in contact with only the baser elements of civilized life—and these usually form the advance guard of our civilization. There is an abundance of the grossly animal characteristics in both male and female Indians, and in nothing has the

influence of education and Christianity been more positive and noteworthy than in the improvement which has taken place in some localities with regard to marriage and the sexual relation.

At the Quapaw Agency (Indian Territory) my correspondent writes me that "blanket marriages" are common and popular, that many of the girls are of easy virtue and live with a man only until they meet one whom they like better.

The Uintah Utes (Utah), though lazy and filthy and with little regard for marriage among themselves, do not cohabit with whites or with Indians of other tribes.

The Mojaves of the Colorado River Agency (Arizona) marry very young, and remain with their husbands only until one or the other tires of the association. They have no form of marriage ceremony.

Marriage is a matter of convenience with the Klamath Agency (Oregon) Indians, young men being not infrequently married to old women.

Among the Crows and Assiniboines and some other tribes a girl has nothing to do with the selection of a husband. The matter is entirely arranged by the suitor and the girl's parents—a horse or some other object of value being agreed upon as the price to be paid for the girl. The girl then measures the man for a pair of moccasins as a sign of acceptance, goes to his lodge, and is henceforth his wife.

The marriage and divorce customs among the Cherokees are much the same as among civilized whites. My correspondent has had twenty years of experience among them, and says that they are more virtuous and more strict in regard to the marriage tie than whites. The marriage ceremony may simply be an agreement to live together, or the more formal one of the church or the civil officer.

There are a few of the tribes, yet uncivilized, in which women are compelled by custom and sentiment to be virtuous; but, from the testimony of most of my correspondents whose information is gained by personal contact with Indians, it is

apparent that as little restraint is imposed upon the sexual appetite by both men and women as upon the passions and appetites in general. A savage life is eminently an animal life. Among the Crows and Assiniboines indulgence is so excessive that the men are frequently impotent at forty.

On the other hand, among the Cherokees and at the Green Bay Agency (Wisconsin), where the social and sanitary conditions of civilized life have been operating, we find greater self-restraint and less ardent sexual appetite.

The following table shows the age at which marriage is usually consummated in some of the tribes :

Name of tribe.	Customary age of marriage.
Cheyenne and Arapahoe . . . . .	17 to 24
Crows and Assiniboines . . . . .	15
Kickapoos and Shawnees . . . . .	15 to 17
Round Valleys . . . . .	16
Utes . . . . .	13 to 16
Crows . . . . .	12 to 14
Puyallups . . . . .	14 and upward.
Quapaws . . . . .	16 and under.

#### CONCEPTION AND GESTATION.

We find the same tricks and crimes accompanying conception and gestation among Indians that are common everywhere. Nor is it probable that their ideas upon these matters are borrowed from civilization. Everywhere, in all grades of society, there seems to be an inherent desire with a certain number of women to avoid the cares and responsibilities of maternity.

Among the Quapaws the child-bearing period ends at thirty-five to forty. They occasionally use means to prevent conception.

The Cheyennes and Arapahoes are quite prolific; among ten of them the average number of children was 6.1.

Neither the Sacs and Foxes nor the Round Valleys are prolific, and in the families there are seldom more than two or three children.

The Crows and Assiniboines are very fertile, unmarried women frequently having several children. The child-bearing period frequently continues until the forty-fifth year.

The Cherokees are less prolific than the whites. There are now comparatively few full-bloods among them, and they do not seem to be as strong physically as in preceding generations.

Among fifteen Apache women there was but one (aged twenty) who had borne no children; the others had borne from one to nine.

Among forty-nine Sioux there was but one (fifteen years of age) who had borne no children; the others had borne from one to fourteen, the average being slightly over six.

The Skokomish are not prolific; the mixed have more children than the pure bloods.

The Puyallups bear many children.

The Neah Bay (Washington) women drink a decoction of an herb (the name of which my correspondent did not know) to prevent conception, but the very young women are eager to become impregnated, that they may not be compelled to go to the Government school.

The Green Bay (Wisconsin) women bear many children.

Indian women rarely abort, except as the result of severe traumatism. Hardships and ordinary injuries have little effect upon them, in so far as interrupting pregnancy is concerned, but criminal abortion is prevalent to a remarkable degree in some of the tribes.

At the Quapaw Agency (Indian Territory) one abortion was reported as resulting from the kick of a horse. Criminal abortions among the full-bloods are rare at this agency, but among the mixed they are about as frequent as among whites.

Of ten Cheyenne and Arapahoe women who had reached the menopause, not one had ever suffered an abortion.

At the Sac and Fox Agency (Indian Territory) my correspondent had never known of an abortion, either accidental or induced, among the pure bloods.

Among the Crows and Assiniboines criminal abortion is very common, being performed or superintended by specially trained women. In some cases a pointed stick is introduced into the uterus, the ovum being ruptured. In others a stake is driven into the ground, the patient rests her belly upon the upper end of it, which is about two feet from the ground, and whirls around until the fœtus is expelled. Another method is for the patient to lie upon her back, a wide board being laid across her belly. Upon this board two or three of her female friends, in turn, stand or jump until the blood gushes from the vagina; or the belly is kneaded or tramped upon until the fœtus is expelled. Severe as this treatment is, it is said that death seldom results.

Criminal abortion is an occasional occurrence among the Cherokees.

At Fort Reno (Indian Territory) the women were very indignant when asked if they had ever suffered miscarriage.

Of fifteen Apache women one had suffered one miscarriage, another two, and another nine, the first and third of these women being syphilitic.

Of forty-nine Sioux women one, a consumptive, had suffered one miscarriage, and three others had suffered two each; all of the three women were sufferers with ovarian disease, though the extent or variety is not stated.

Abortions are frequent among the Skokomish (Washington) Indians, but whether induced or accidental is not stated.

Let us study, in this connection, for a moment, the condition of the Indian children, and the case which is narrated will apply in many respects to many other tribes, especially those who are passing through the transitional stage. The Modocs are located at the Quapaw Agency (Indian Territory). Many of their infants die under one month of age; many of those who survive have enlarged cervical glands and tonsils. These people live in poorly ventilated huts, are inactive, idle, and depend upon the Government for their food. Dogs and human beings, sick and well, are all huddled together, and

the meat upon which they subsist is hung on the walls of their dwelling. Since their removal from Oregon in 1873, when they numbered 152, there have been 102 births and 170 deaths. Those who were left in Oregon have more than doubled in number in the same period.

The treatment of newborn infants by the Crows and Assiniboines is peculiar. As soon as the baby is born, the midwife seizes the umbilical cord three or four inches from the child's body, ties it with tape or cord, and cuts it with a *new* butcher-knife which was bought months before and has been kept for this purpose. The stump of the cord is kept well greased until it falls off. The babe is then placed unwashed in a laced sack or pouch made of blue cloth (formerly the skin of the buffalo calf was used). The sack contains pulverized bull's manure or the inside bark of the cottonwood tree to keep the child warm and prevent chafing and also to receive the discharges. The sack is emptied several times daily. The dried stump of the cord is preserved in a beaded pouch of antelope's skin about one inch in diameter, fine tobacco being also in the pouch as a preservative. A buckskin thong is attached to the bag, and the child wears it about his neck or waist. It is kept in the family during the life of the original possessor, and men wear them in battle as amulets or charms (mementoes of their birth).

Among the Yankton Sioux, many infants die from scrofula and syphilis.

The majority of the Puyallup children die before puberty. Lactation among the Puyallup Indians may continue two and a half or three years. It is not uncommon for a woman to suckle an infant at one breast, and a child of two or two and a half years at the other.

The children of the Green Bay (Wisconsin) Agency suffer greatly from glandular and eye diseases, and the mortality among them is great.

## PARTURITION.

Nature's methods are abundantly and forcibly illustrated by the way in which savages manage parturition. It is not impossible that amid the refinements of the obstetric art we have forgotten some things which these children of Nature find very useful while experiencing parturition.

It was said to me concerning the Mojaves that they experience about as much trouble in having children as a cow does in having a calf, and there is abundant testimony that this remark will apply to Indians generally who have not been weakened by vice or disease.

At the Pawnee Agency (Indian Territory) the Government physician stated that he had rarely attended an Indian confinement, and the one at the Cheyenne and Arapahoe Agency had never been present on such an occasion. Any assistance which might be required was furnished by native midwives, unless some complication arose. At the Quapaw Agency (Indian Territory) not even midwives are required as a rule.

At Fort Belknap (Montana) both midwives and herb-doctors are available for obstetric cases.

At Fort Hall (Idaho) the Government physician has attended one Indian woman in labor during six years of service.

At Round Valley (California), midwives, who are both superstitious and ignorant, are usually employed.

From the Omaha Agency (Nebraska), Dr. Susan La Flèche, an educated Sioux woman, writes me that the sentiments of Indian women at that agency are changing in regard to professional care during their confinements. She has been treated respectfully by the people, and within a short time has attended six confinements in full-bloods and two in half-breeds.

At Fort Peck (Montana) the Agency physician has never been called to attend a full-blooded Indian in labor.

Midwives attend the labor cases among the Nez Percés and Puyallups.

## CUSTOMS AND INCIDENTS OF PARTURITION.

A Cheyenne or Arapahoe squaw who is about to be confined goes off by herself or with a midwife, no males being permitted to be near. After labor is completed, she cannot enter the lodge or tepee until she is quite well. The comment upon these Indians by my correspondent was, that they are not much more intelligent than the lower animals nor more civilized than when Columbus discovered America.

The Quapaw squaws, in many cases, are detained from their ordinary duties less than a day by parturition.

At Neah Bay (Washington) labor is usually rapid, and is never followed by bad results.

The Sac and Fox squaws suffer little during parturition. When one of them is taken in labor she gets on her knees, bends forward and rests her chest and arms upon a pillow, bed, or box until delivery is accomplished. Or delivery may be accomplished in the dorsal position, but this is the only Agency from which it was reported that the dorsal position was ever employed. To show the ease with which parturition is accomplished, it was stated that a pregnant woman walked three miles to the Agency on a certain day, went home at night, and the next evening walked in again carrying her newborn baby lashed to a board. Very often labor takes place in the open air and the parturient does not return to her home until the lochial discharge has ceased. This may involve exposure to very severe weather.

The Crow and Assiniboine squaws assume the kneeling position during labor, resting the head against a support eighteen inches or two feet high. During the pains the midwives press or rub the patients in the lumbar region. After the child is born the patient's nose is tickled with a feather, and the sneezing which results assists in the expulsion of the placenta. The placenta is wrapped in the blanket upon which delivery took place, the blanket being then secured in a tree. Should the placenta be eaten by a wolf, coyote, or other



animal, it is believed that the child will resemble that animal or be lost on the prairie and be devoured by animals, its exact fate never being determined. The placenta must not be thrown into the river, as in that case the child might resemble a fish or be drowned and eaten by fish. Labor takes place in the open air, the woman seldom going to bed during or after it, and resuming her work when it is completed.

Parturition among the Utes is almost invariably easy. Though they are a degraded people they live in a wholesome climate which is subject to few changes, and at an altitude of 6500 feet.

The Cherokee women use certain herbs for months prior to labor, in order that it may be easy. When their pains come on they usually conceal themselves until labor is over.

The Mojaves seldom give up more than a day or two to parturition.

The Apaches suffer very little during labor. They wear very little clothing and do not cleanse the external genitals for ten days after parturition.

Labor is short and easy with the Yankton Sioux, though with the half-breeds it is sometimes severe. The full-bloods never go to bed for such a cause. They are confined upon their knees, the head being supported. Between the pains they get up and walk around.

The Puyallups are confined in a sitting posture on the ground, and usually return to work in from one to three days. Occasionally parturition is fatal to both mother and child.

The Puget Sound Indians are usually attended by midwives, and are delivered in the squatting position. They assist themselves by grasping a pole or small tree.

#### ACCIDENTS OF PARTURITION.

These are of occasional occurrence among Indians, and as they learn to place confidence in the Agency physicians, more

and more opportunities will be afforded for relieving such mishaps. The following cases have been reported to me :

The physician at the Cheyenne and Arapahoe Agency (Indian Territory) was recently asked to remove a placenta which the midwife was unable to remove.

The physician at the Round Valley Agency (California) was called to see a primipara of fourteen, who was having a slow and severe labor, and was allowed to extract with forceps.

At Fort Belknap (Montana) procidentia uteri has been observed as the consequence of labor, and an occasional death from faulty presentation. Two cases of rupture of the uterus were seen there during the past year, both cases being fatal to the mothers and children. No help had been sought while the women were in labor.

#### DISEASES OF THE PUERPERIUM.

So far as any information could be obtained upon this subject, such diseases are unknown among Indians.

#### MALIGNANT DISEASE.

At the Quapaw Agency (Indian Territory) malignant disease had been occasionally observed, but it was less common in the full-bloods than in the mixed.

At the Sac and Fox Agency (Indian Territory) it was unknown.

At the Round Valley Agency (California) the only case ever seen was a cancer of right breast in a multiparous woman thirty years of age. It had been in an ulcerated condition two years, and at the time of the report was not progressing.

My correspondent among the Cherokees had removed from full-bloods breasts and superior maxillæ for cancer, but had seen such disease more frequently in whites and mixed breeds.

From no other source was there any indication of the existence of malignant disease.

## PELVIC DISEASE.

It is not possible to state upon a basis of *extensive* information, whether pelvic disease is prevalent among Indian women or not. The reasons have been given why such information cannot be obtained. On the other hand evidence enough has been collected to satisfy one that such women are not necessarily exempt from the diseases and deformities of the genital organs to which women in civilized life are subject.

At the Pawnee Agency (Indian Territory) it was said to be a very rare thing to treat a woman for disease of the generative organs.

At the Ponca Agency there was no record of treatment of disease of the female genital organs. During my correspondent's five years' residence there, practice of such a character would have been impossible on account of the prejudice of the squaws against white physicians.

At the Shoshone Agency (Wyoming) it was said that the women never talk to men concerning the genital organs, and if they suffered with disease of those organs would neither consult their native medicine men nor white physicians.

At the Quapaw Agency (Indian Territory) uterine disease is practically unknown.

At the Cheyenne and Arapahoe Agency (Indian Territory) only one woman could be found who gave a history of pelvic disease. She was sixty-one years of age, said that she had suffered pain in the ovarian region during her menstrual periods, and was then suffering with abdominal dropsy.

At Fort Belknap Agency (Montana) there are no records of treatment of pelvic disease, and the women will not usually consult white physicians for such troubles if they are suffering with them. During the past two years my correspondent has had but two opportunities to make vaginal examination with the speculum. Both patients were suffering with venereal disease.

At Fort Hall Agency (Idaho) the men would not permit

the women to consult white physicians for pelvic disease if it was present.

At the Sac and Fox Agency (Indian Territory) my correspondent, who has resided there for four years, has neither seen nor heard of a case of uterine disease, exemption from such disease being due to the mode of dress and abundance of out-door exercise.

At Round Valley Agency (California) one case of pelvic disease has been seen in five and a half years of practice.

At the Omaha Agency (Nebraska) the women would give no information concerning their pelvic organs, even to their female relatives.

Among the Crows and the Assiniboines uterine disease prevails, but its extent is not known. A squaw would not consult a white physician for such a trouble unless compelled by a white husband. She might come to the Agency physician for medicine if sick with venereal disease, but would not submit to a vaginal examination.

The Cherokees suffer from pelvic disease to about the same extent as civilized white women, especially "those who have adopted corsets and opera-heels." A peculiar habit with some of the Cherokee women consists in compressing the mammary glands with round, flat stones to prevent their growth.

At Fort Duchesne (Utah) the post-physician, during ten years' residence, had never been called to treat pelvic disease in Indian women.

At Fort Reno (Indian Territory) the women said they had never had any sickness until the buffalo left, and they were compelled to eat the same food as the whites.

No history of pelvic disease could be obtained by inquiries among the Apaches, the Yankton Sioux, or the Flatheads.

Among the Nez Percés, who are making considerable progress in civilization, it was said that female disease was becoming more common with the advance of civilization. My correspondent reported a case of leucorrhœa and a case

of polymenorrhœa in young women who had abandoned savage life, and had enjoyed the privileges of education.

Pelvic disease was said to be rarely seen at Green Bay Agency (Wisconsin). The physician, during a residence there of a year and a half, had attended one case of gonorrhœa in a woman, and had removed a large vesical calculus from a woman of sixty-five.

### VENEREAL DISEASE.

IN view of the loose social organization of the Indian tribes, the communistic tendencies in many of them, and the pernicious influence and depraved physical and moral condition of many of the whites who have associated with them, and the general disregard of hygienic conditions in the home and by the individual, it is remarkable that the venereal diseases are not more frequent. The theory still adhered to in some quarters that the Indians as a race are syphilized is not sustained by the frequency and virulence of syphilis in some of the tribes. Among eighteen histories of Apache women, there were four cases of syphilis, and in two of them in which miscarriages occurred, it is fair to presume that the miscarriages and the syphilis were associated consequence and cause. In the forty-nine histories of Sioux women, no cases of syphilis were reported, though it is well known that both congenital and acquired syphilis are common in this nation. The report of the Indian Commissioner alluded to refers to syphilis and other venereal diseases as prevailing at the Ponca, Fort Peck, Fort Hall, San Carlos, Round Valley, Colorado River, and Crow agencies.

### III.

#### CONCLUSIONS.

What conclusions, if any, are warrantable from the facts which have been gathered?

1. *Puberty.* It does not appear that the mere fact of living in a savage state has much to do with the early or late appearance of puberty. The Apaches and Mojaves, of the hot and desert regions of Arizona, mature young—at least, many of them do, but so do the females of Southern Europe and of tropical climates generally, amid surroundings of civilization, with its comforts and abundance. The law is of general application, that animals or plants will mature young under a tropical sun.

On the other hand, the females of the northern tribes—the Cheyennes, Arapahoes, Crows, Assiniboines, and Sioux—develop more slowly, as is the case with women in Northern Europe.

The barbarous and heathenish ceremonies which mark the presence of puberty in some of the tribes should be suppressed, and the Government should be commended in its efforts in this direction.

2. *Phenomena of menstruation.* Savage life, with its vicissitudes and hardships, does not usually interfere with the regular recurrence of the monthly flow. Influences which would disturb or check it, and possibly produce permanent injury to a woman in civilized life, seem to have no such effect upon Indian women. Excessive menstruation seems to be practically unknown.

On the other hand, there are occasional instances of dysmenorrhœa or amenorrhœa in connection with disease or deformity of the pelvic organs, so that savage life does not necessarily furnish immunity from such experience.

3. *Menopause.* Indian women are exceptionally free from the nervous and vascular disturbances which so commonly accompany the menopause in civilized women. The menopause may come abruptly, or it may be prolonged through a series of years. There is as great diversity as to its duration as appears among civilized women in similar physical condition. The isolated instance reported in which insanity developed in an Indian woman at the menopause

appears to have been quite exceptional. The menopause usually comes between the fortieth and fiftieth years, as with civilized women, but it is not infrequently delayed beyond the fiftieth year. Many gestations occurring in rapid succession, continuous hard work and the exposure and physical suffering incidental to a savage life do not tend to shorten the menstrual and childbearing periods.

4. *Marriage and sexual appetite.* The social condition of Indian women is an anomalous one for this age and country. They must bear the burdens, do the drudgery, bring forth and rear the children, and then, perhaps, be cast aside at the merest whim of their husbands. Marriage among American Indians means, as a rule, communism, polygamy, unrestrained lust, according to circumstances, all of which must be abandoned as they emerge into civilization, for they are incompatibles. Sexual appetite in Indians is the uncontrolled and uncontrollable desire of the wild beast, or it is an indifference in women of the degraded and debilitated tribes, except as it is associated with the idea of gain.

5. *Conception and gestation.* The habits and manner of life in the more vigorous and well-developed Indian women are favorable to fruitfulness in childbearing. But the facts that so many children die in infancy, and that the restraints of civilized life are fatal to so many more show that the race is not a hardy one. The unhygienic condition of the homes in many tribes, with their filth and degradation, and the frightful abuses of the abortionists in others, are further tending to weaken the race and impair its future.

6. *Parturition.* The ease with which parturition is accomplished among Indians is an interesting fact. Something is to be said in favor of the posture which they assume during labor, for the squatting or kneeling position is far more favorable to muscular effort than the positions with which we are familiar in the lying-in chamber. This matter may be deserving of some attention on the part of practising obstetricians.

Another interesting fact is the apparently total absence of puerperal diseases among Indian women. This is due to pure air and plenty of exercise, and not to antiseptics or even ordinary hygiene. Do not the quick recovery and return to ordinary duties of Indian parturients suggest that we sometimes keep our obstetric patients in bed longer than is beneficial or necessary? There should be no hard and fast rule in matters of this kind.

That accidents occasionally occur with Indian parturients is simply saying that Nature does not always work efficiently. The domestic animals occasionally require the assistance of a skilful midwife, and die if it is not provided. The same is true of Indian women. Natural labor among Indians is a simple matter, unnatural labor is usually death; it is the higher intelligence of civilization which averts it.

7. *Pelvic disease.* That pelvic disease has not been treated among Indians does not prove that it does not exist. We can fairly presume the existence of the entire class of pelvic diseases which result from infection, deformity, maldevelopment, and faults of circulation. But they will go untreated and more or less unheeded until the suffering caused by them becomes keener, and confidence in educated physicians, white or red, stronger. The malignant diseases of the reproductive organs seem almost unknown among Indian women. This teaches us that it is not privation, nor hard work, nor exposure, nor giving birth to and rearing many children which, of themselves, lead to the neoplasms which so afflict civilized women the world over; the explanation must be sought elsewhere.

8. *Venereal disease.* Both local and constitutional forms of venereal disease abound among Indian women. The frequency of syphilis, coupled with the great mortality among infants, and the great prevalence of glandular and pulmonary disease among many of those who survive infancy, are evidences of the inroads which venereal disease has made upon Indian vitality.



*Finally.* Indian women in the savage state undergo less physical suffering in connection with the reproductive apparatus than do civilized women. They menstruate, bear children, and pass the menopause with the minimum of discomfort, as a rule. This is due to three causes: (1) Natural or racial insensitiveness, compared with the far more sensitive Caucasian; (2) abundance of exercise; (3) life in the open air. Civilized life, with its complex conditions, will always present obstacles to the performance of the functions peculiar to women with the same ease with which they are experienced by savages, and when Indian women exchange the savage for the civilized state, they must necessarily adopt, also, some of the ills which are inseparable from the latter.

## APPENDIX.

The Ponca Agency in the Indian Territory has a population of 1843, including the Ponca, Otoe, Pawnee, and Tonkawa bands. They are under educational and religious influences. The births last year among them numbered 100, deaths 121. Syphilis prevails. The marriage relation is lightly regarded. They still retain some of their heathenish customs. Condition: transitional, medium.

At the Shoshone Agency in Wyoming are 833 Shoshones and 825 Arapahoes. Births 65, deaths 90. A few of the children attend the Government or religious schools. Condition: transitional, poor.

The Cheyenne and Arapahoe Agency is in Oklahoma. Cheyennes 2272, Arapahoes 1100. Births 187, deaths 413. There are Government and religious schools, but they cling tenaciously to their old ways. Many are polygamists, though the Government is striving to abolish polygamy. Condition: transitional, poor.

The Quapaw Agency in the Indian Territory contains eight small tribes, numbering 1234 in all. These people have intermarried extensively with whites. A weak offspring has resulted, and this, with bad hygiene, has been attended by much disease and death. Still, with the exception of one tribe (Modocs), they

have been making fair progress. Good results have been obtained in the schools, and none of the tribes, except the Modocs, have received any assistance from the Government the past year. Births 43, deaths 30. Condition : nearly civilized.

Fort Peck Agency is in Northeastern Montana and contains 1121 Sioux and 721 Assiniboines. They have good schools and religious instruction, and are making progress. Syphilis and gonorrhœa are moderately prevalent. Polygamists 160. Births 90, deaths 45. Condition : transitional, medium.

Fort Belknap Agency is in Montana, near the Canada line, and has 770 Gros Ventres and 952 Assiniboines. About one-fifth of them have abandoned the dress and customs of savagery. There are Government and religious schools, which are poorly attended. They are exceedingly immoral. Births 58, deaths 57. Condition : transitional, poor.

Fort Hall Agency is in Southeastern Idaho, and has 979 Shoshones and 514 Bannocks. They are indolent and unprogressive, and school and church influences have as yet accomplished little. A few are polygamists. Venereal disease is fairly frequent. Births 26, deaths 18. Condition : transitional, poor.

Neah Bay Agency is in the northwestern part of Washington, with the Pacific Ocean and the Strait of San Juan de Fuca bounding two sides of it. It has 454 Makahs, 242 Quillehutes. They are fairly civilized, free from venereal disease, self-supporting, and, with the exception of a few heathenish rites which are broken up with difficulty, are doing well. Births 16, deaths 44. Condition : nearly civilized.

San Carlos Agency is in Southern Arizona and has 4000 Apaches, 557 Mojaves, and 240 Yumas. The Apache has the worst reputation of any American Indian for cruelty, blood-thirstiness, and everything else that is bad. About one-fourth of the children are being educated. Polygamists, more than 100. Venereal disease abounds. Births 205, deaths 132. Condition : savage.

Sac and Fox Agency in Oklahoma has a population of 2062, included in five tribes. In the arts of civilization, in trading, and farming they have made much progress. Many of them are immoral, and family ties are not seriously regarded by many.

The schools and churches among them seem to be doing good work. They are self-supporting, and slowly increasing in numbers. Births 113, deaths 100. Condition: nearly civilized. Pottawatomies already citizens.

Round Valley Agency, in Western California, has a population of 592, including the remnants of eight tribes. They are exceedingly immoral and degraded, marriage being merely a matter of convenience. Three-fourths of them are self-supporting. Venereal disease is prevalent. Births 10, deaths 26. Condition: transitional, poor.

Omaha Agency in Western Nebraska has 1173 Omahas and 1212 Winnebagoes, all of them self-supporting excepting five per cent. of the latter. They are free from venereal disease, but 28 cases of pelvic disease in women were reported last year. Schools and churches are doing good work. The Omahas respect the marriage relation, the Winnebagoes do not. Births 95, deaths 96. Condition: nearly civilized.

Uintah Agency, in Northeastern Utah, has 833 Utes, who are filthy, degraded, and immoral, having made little progress toward civilization. The Government has a school there, but there are no religious societies at work among them. Births 20, deaths 10. Condition: transitional, poor.

Santee Agency, in Eastern Nebraska, has 1161 Sioux and 217 Poncas. Nearly all are self-supporting. The schools are very efficient. There are many native mechanics. Births 39, deaths 44. Condition: nearly civilized.

Union Agency includes the five civilized tribes in Indian Territory, the Cherokees, Creeks, Choctaws, Chickasaws, and Seminoles, 67,000 in all. They have entirely abandoned savage life, and have the same institutions and habits as the whites in the States which are contiguous to them. They have their own schools, asylums, courts and churches, libraries, and printing-presses. Many difficulties and abuses exist, due partly to vicious influences from without and partly to the faults or defects of the Indians themselves. These Indians show the possibilities of the race. Condition: civilized.

Colorado River Agency, in Western Arizona, has a population of 640 Mojaves. They are degraded and immoral, but tractable

and susceptible to good influences. Venereal disease is of limited prevalence. Births 30, deaths 30. Condition: transitional, medium.

Crow Agency, in the southern part of Montana, has a population of 2456 Crows. Good educational and religious opportunities abound. The Government provides more than half of their support. Polygamists, 200. Venereal disease, immorality, and licentiousness abound. Births 60, deaths 90. Condition: transitional, medium.

Klamath Agency, in Southern Oregon, has 835 Klamaths, Modocs, and Piutes, who are ignorant and degraded. Polygamy is common. The Government has two boarding-schools here, from which much benefit is anticipated. Births 13, deaths 25. Condition: transitional, poor.

Flathead Agency, in Northwestern Montana, has a population of 1784, of whom all but 84 are church members. The educational and religious influences are good. Most of the Indians are progressive and thrifty, with the exception of a band of Kootenais. Births 60, deaths 78. Condition: transitional, medium.

Nez Percés Agency, in Northwestern Idaho, has a population of 1715 Nez Percés, nearly half of whom are church members. They are making good progress. Births 33, deaths not stated. Condition: nearly civilized.

Puyallup Agency, in Western Washington, has a population of 1830, including sixteen tribes. Most of them are self-supporting. Many are civilized and citizens, intelligent, industrious, and in some cases wealthy, but disease is diminishing their numbers. Births 88, deaths 91. Condition: civilized.

Green Bay Agency, in Eastern Wisconsin, has a population of 3164, belonging to the Oneida, Stockbridge, and Menomonee tribes. They are quite civilized and prosperous. Births 67, deaths 84. Condition: civilized.

## IMMEDIATE CLOSURE OF LACERATION OF THE CERVIX.

BY CORNELIUS KOLLOCK, M.D.,  
*Cheraw, S. C.*

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To say that laceration of the cervix uteri should always be closed immediately, calls for more temerity than I possess; but that there are circumstances where it is not only proper, but urgently demanded, I am compelled to admit. I am also inclined to the belief that whenever everything is favorable to the operation, and when it can be done without too much rough handling of the congested and tumid cervix, the sooner the laceration can be closed the better, not only for the instant relief afforded, but for the promise of a more sure and complete union of the parts. The woman is also spared much discomfort and suffering, both physical and mental. In some respects we think the primary operation for laceration of the cervix stands to the secondary as the primary operation for laceration of the perineum does to the secondary in cases of that kind. In both operations fresh parts are brought together, when healthy union is very sure to take place; the knife is not used in either case, and the patient is saved the shock from that, and is also saved the loss of blood which is sometimes considerable in the secondary operation for both laceration of the cervix and perineum.

To exemplify the correctness of views above stated, I beg to be allowed to read a brief report of three cases of laceration of the cervix in which I operated immediately after labor, with signal success.

CASE I.—White, aged twenty-seven years; has had two children and a miscarriage; general health good; menstruation commenced when thirteen years and six months of age, and has always been regular in every respect. Labor commenced at 10.30 A.M., October 19, 1890. The attending physician, a man of intelligence and large experience, arrived at 11 A.M., found the presentation all right and the parts in good condition. In less than thirty minutes after the arrival of the physician, the child, placenta, and membranes were all expelled from the uterus; the child, a female, was large, weighed eleven and a half pounds, the head well developed and unduly ossified. As soon as the uterus was emptied a copious post-partum hemorrhage came on which all remedies failed to check. When I first saw the case the patient was nearly gone; was pulseless at the wrist, and took no notice of anything. A digital examination revealed an extensive laceration of the cervix extending up to about the vaginal junction. As there was no time to be lost, the woman was gently turned upon the left side and a quart of hot solution of alum was thrown upon the cervix. By the aid of a Sims speculum the laceration could be distinctly seen. Five silver sutures were then introduced and the edges of the laceration drawn in juxtaposition and the hemorrhage was entirely checked. The vagina and cervix were washed out with a hot solution of bichloride of mercury 1 : 3000, and the patient left alone for an hour or two when she rallied completely. The sutures were removed on the twelfth day, when there was a complete union by first intention of the whole extent of the laceration. The patient nursed her infant and made a prompt recovery.

CASE II.—White, primipara, aged eighteen years; rather stout and muscular; general health has always been fine; menstruation commenced at thirteen years of age and was always normal. On April 7, 1891, I was called to this case and found an alarming post-partum hemorrhage. From the account given by the attending physician, a man of limited experience and intelligence, I concluded there was excessive rigidity of the os. He remained with the case thirty-six hours, when the pains became very feeble and the intervals much lengthened. The doctor's patience becoming threadbare, he administered several generous doses of the

extract of ergot. In a short time the uterine contractions became powerful and the labor was over. I was amazed to see the patient in as much comfort as she appeared to be. A large quantity of blood had been lost, the bed was saturated with blood, and much had run off on the floor. Suspecting, from the history of the case given by the attending physician, that there was a laceration at some point, I made an examination and found a bilateral laceration of the cervix extending on the right side up to the vaginal junction, reaching not quite so high up on the left. There was also a laceration of the perineum. Five silver sutures were inserted on the right side and four on the left. The parts were thoroughly washed with a hot solution of corrosive sublimate 1 : 3000. The sutures were removed on the tenth day and a firm reunion was found, both in the laceration of the cervix and in the perineum. In this case the uterus had receded too much to make the introduction of the higher sutures easy; it was necessary to bring it down a little. Being unwilling to use Muzeaux forceps or any penetrating instruments, a gentle pressure was made on the lower abdomen just above the pubes, and I then seized the lower labium with dressing forceps, the blades being thoroughly wrapped with patent lint to prevent any contusion or penetration of the parts, and brought the cervix within manipulative distance, and the sutures were inserted without any difficulty. This patient made a prompt recovery.

CASE III.—White, primipara, aged twenty-eight years; general health only fair; menstruation for the first three or four years has been somewhat irregular and accompanied with considerable pain, so severe at times as to call for the use of anodynes. There was strong ground for suspecting that opiates were being used too freely. I soon learned that the opium habit was pretty well established, and that she daily took twelve or fifteen grains of morphia. This woman also lived rather luxuriously, took very little out-door exercise, is frail and delicate in appearance, has been married about seven years, and this is her first conception. I was called to this case at 8.50 A.M. on August 6, 1891. The parts were in good condition—soft and moist. Occiput to the left. The os dilated to about the size of a twenty-five-cent piece. Pains that came on an hour or two previous

were then very slight. Suddenly the uterine contractions became very vigorous, and at 9.15 the labor was over. The child, a large, well-developed girl, weighed nine and three-quarter pounds. I was guilty of no meddling midwifery, and did not administer any ergot, nor were forceps applied; there was nothing unusual presented, so far as the mechanism of the labor was concerned; but as soon as it was over a copious post-partum hemorrhage followed, and it was very persistent. A tampon and styptic sponges were applied, but they did no good. The patient was then placed in the left lateral semi-prone position and a Sims speculum introduced, when a rent was found extending upward and backward to the extent of nearly two inches. The wound being cleaned as thoroughly as possible, the circular artery was found ruptured. After a thorough twisting of the artery seven silver sutures were introduced and secured. This caused a complete cessation of the hemorrhage. The sutures were removed on the twelfth day, and the laceration was found firmly closed. This patient had as good a recovery as the other two.

Fears have been entertained that sutures introduced for immediate closure of laceration of the cervix cannot be depended on. As the congestion and tumidness of the cervix subside they will become loose and fail to keep the edges of the laceration in sufficient coaptation. Dr. Pallen mentions the pulling out of a suture in one of the cases in which he operated. But this proves nothing; it is not at all uncommon for sutures to pull out in the secondary operation for laceration of the cervix. The presence of cicatricial tissues renders the parts more difficult of proper coaptation; besides, the process of union is more slow. After all, the congested and tumid condition of the cervix does not so strongly forbid the introduction of sutures into it.

While all admit the advantage of the primary operations for laceration of the perineum over the secondary, the same objections may be urged to the introduction of sutures in cases of this kind, as in those of the cervix. There is more or less enlargement of the vagina during pregnancy, and there



is an enhancement of the number and calibre of the vessels in all the underlying and adjacent tissues. In fact, the development in this region keeps pace with that of the uterus. In the Cæsarean section, which is now done with signal success compared to what it was twenty years ago, sutures are introduced into the uterus when it is in the highest state of congestion, and when its vascularity is very great. But the tendency of the sutures to pull out is not reckoned among the most potent causes of the failure of the operation.

## DISCUSSION.

DR. ROBERT A. MURRAY, of New York.—I read a paper on this subject about a year ago before the New York County Medical Society. Most of the gentlemen who took part in the discussion were in favor of making immediate repair where the tear was a deep one. Where the circular artery has been torn nothing else will stop the hemorrhage, and the practitioner who should leave such a case without an operation might return to find the patient dead.

If the uterus is contracted and there is still hemorrhage, the presumption is that there is some laceration. The cervix is patulous, lies under the pubes, can be easily grasped and brought into view, and the mere pulling down of it will stop the hemorrhage while you are operating. I have had occasion to operate two or three times, once in a case in which the husband held the cervix down while I inserted the sutures. In one case I used chromicized catgut, in the two others silver wire, which did very well. I think the theoretical objection that involution of the uterus will relax the sutures will be set aside by the fact that four or five days after labor the cervix is still patulous, and makes no traction on the sutures. The results have been as good as after the secondary operation, and I think better. Asepsis can be maintained by pulling the uterus down to the vulva and keeping a stream of antiseptic fluid flowing over it during the operation. In the three cases I have not used a speculum.

DR. THOMAS ADDIS EMMET, of New York.—In responding to your invitation to discuss this paper, I must state that I heard only a portion of it, and I scarcely know its scope. If it is a question as to the immediate operation for lacerations of the cervix, I may say that I would not advise its performance unless there was hemorrhage. Usually where there is an amount of injury to the cervix requiring an immediate operation there is also damage to the vaginal outlet, and I would advise the repair of both at the same time. In the existence of the latter, if the case is allowed to go without repair, the pelvic fascia becomes retracted, so that the bloodvessels of the pelvis being no longer properly supported by means of the connective-tissue, become enlarged as soon as the woman gets up. Hence the sense of weight and bearing down which have been attributed to so-called laceration of the perineum, in those cases of injury to the vaginal outlet. If the tear is at all extensive it should be repaired at once, for the operation is not a difficult one, as the parts lie in apposition, and it guards against septic absorption from an open wound. Unless the bleeding from the torn cervix was excessive at the time, I think that it would be good practice as the rule to let it alone, through fear of doing more harm than good.

DR. H. C. COE, of New York.—We should clearly understand that this measure is purely a hæmostatic one, that the main object of the operation is to arrest bleeding, not to repair the laceration. The circular artery has always been a great bugbear in gynecology. The artery is so situated that a laceration, in order to involve it, must extend so high as to become subperitoneal. In a case like that hemorrhage may be so severe as to require prompt attention. But I have never encountered but one such case, in which the insertion of two or three silver-wire sutures certainly saved the patient's life. In others in which the circular artery seemed to have been torn, the application of ice, counter-pressure, etc., stopped the hemorrhage. I have called attention to the point once before that when you do the immediate operation you have a contused wound bathed with an acrid, perhaps a septic, discharge. In general surgery, suture of such a wound would never be recommended. The difficulties attending the immediate operation, even in hospital practice, have been

greatly underrated. If left to themselves, these wounds close by granulation (it is assumed that antiseptic vaginal injections are given) and drainage is perfect, but if the subperitoneal space is opened up, and the laceration is closed without securing perfect asepsis, a dangerous purulent focus may be the result. It is well known, however, that with ordinary care and the use of the vaginal douche extensive lacerations of the cervix may heal so smoothly as to require no subsequent operation.

DR. EMMET.—I would like to add that I have been called in consultation on account of hemorrhage, existing from a lacerated cervix, and on simply pulling the uterus down the hemorrhage has often been arrested, and on the same principle as the one I presented in the discussion of yesterday on the operation for cancer of the cervix. I then pointed out that the loss of blood in all operations about the cervix could be controlled by making traction on the cervix as it was drawn down and held at the vaginal outlet, and from retraction of the coats of the divided vessel there would be no bleeding afterward.

DR. A. PALMER DUDLEY, of New York.—I think the points made in this paper are of greater value to the profession at large than those made in papers relating to laparotomy and some other operations for conditions which are secondary in origin. If the general practitioner can be educated to the point that he can discriminate between lacerations which require suturing and those which do not, there will be much less work for the specialist. Then, if one can get union of the cervix at the immediate operation, which I hold is quite as feasible as union of the perineum, he will save cutting away a portion of the organ which is necessary when the secondary operation is performed. Very few secondary operations can be done upon the cervix without taking out a portion and causing more or less deformity. Again, when a laceration occurs the bloodvessels and lymphatics are opened, and unless the wound is closed there is danger of the absorption of poisonous material. I do not think the objection that there is liability of carrying septic matter into the woman's pelvis should be thought of for a moment, for no man would introduce his hands after delivery unless they were clean. I do not think, therefore, that that should be taken into consideration as a danger

at all. If the parts have been torn sufficiently to permit of hemorrhage which is dangerous, that hemorrhage should be stopped just as surely as if it were external. I should always examine the patient before leaving her, and if I thought it necessary would put in a suture to prevent hemorrhage and poison. I would use catgut; it is sufficient to keep the parts in apposition, which is all that is necessary. In three or four days there will be sufficiently firm union to hold the parts in place, even if the sutures have meanwhile become loose.

DR. KOLLOCK.—I have little to say in reply. My object in reading the paper was not to impart instruction to the members, but to derive information myself through the discussion which it might provoke. It is hard for one to say that he differs from Dr. Emmet, but I am inclined to do this when he advises to let the case alone if there is no hemorrhage. It is astonishing how many women there are in bad health, almost helpless, and in whom we find a laceration of the cervix which has never been attended to. There is a horrible state of uterine subinvolution; the woman is sterile, her mind and body are both affected, and in two or three cases seen by me the patients had become crazy as a result of neglect of the pelvic trouble. Cases are brought to me by physicians which they say are the worst cases of laceration which they had ever seen, yet on examination I find nothing but an eroded and lacerated cervix which when operated upon and the edges brought together quickly takes on a normal appearance, and the subinvolution, the mental, and other symptoms disappear.

THE PRESIDENT said: The Society would be glad to know whether Dr. Kollock wished to be understood as advocating immediate repair of all lacerations without regard to the presence or absence of hemorrhage. It seemed from the paper that all the patients upon whom he had operated had had considerable hemorrhage, and for that reason the operation had been undertaken. To repeat: Does Dr. Kollock advocate closure of *all* lacerations immediately?

DR. KOLLOCK. If the laceration is extensive, I do.

## PREVENTIVE AND CONSERVATIVE TREATMENT OF PELVIC TUMORS.

BY E. C. GEHRUNG, M.D.,  
*St. Louis.*

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THE brilliant successes which have lately been achieved by surgery in gynecology are so dazzling that minor means, lying in the penumbra of the great light, have been overlooked or forgotten in the headlong rush toward the promised or the promising triumphs of the knife. Though gynecology without surgery is not conceivable at the present time, the latter can never entirely take the place of the former, as there is a great field left in which the minor means can gain as great or greater results than are obtained by the major, while the danger as well as the mortality is greatly diminished, though sometimes at the expense of time, because the treatment is often prolonged.

It has been frequently observed that myomatous and other tumors have ceased to grow for shorter or longer periods, sometimes diminished in size, or have even disappeared entirely, with or without treatment of any kind, when all at once, without any apparent cause, they have resumed their growth and increased in size more rapidly than ever.

The cause of this, it seems to me, from my observations, rests in the following proposition :

*“That benign tumors grow in proportion to the resistance they encounter. In other words, they grow in proportion to the interference with their venous circulation.”*

A tumor lying loose in the abdominal cavity, so to say,

floating among the intestines, will grow very slowly, if at all; while if bound down by adhesions or sinking by its own weight into the small pelvis, where it becomes compressed or impacted, and its circulation impeded, its growth will be accelerated in proportion to the resistance of the surrounding tissues.

Displacements of the uterus or ovaries do not necessarily cause hypertrophy of these organs, but if the one or the other becomes impacted in the small pelvis, and consequently its circulation impeded, congestion and hypertrophy will follow. This hypertrophy, especially if of long duration, is not always a multiplication of its physiological elements only, but not rarely an interpolation of pathological elements, which I suppose *act as nuclei for future tumors*.

If my views are correct, and my experience has led me to believe that they are, then it is evident that by freeing the compressed or impacted organs from their imprisonment, by raising them out of the small pelvis, and by supporting them as near as possible floating among the elastic and ever-moving intestines, that not only will the abnormal growth of the organ cease, but that it will generally soon resume its physiological dimension, and the tendency to the formation of tumors is thus nipped in the bud. So much for the prevention of tumors.

If an impacted and rapidly growing tumor of moderate size be raised out of the small pelvis, adhesions, etc., permitting, and supported free from compressing elements, its growth will generally become less rapid, frequently cease altogether, and not rarely a retrograde process is set up, so as to lead to the partial or complete disappearance of the tumor.

These statements are made on the strength of many cases, some of which have been under observation for the last ten years; all patients so treated have been greatly benefited, some cured. In none of them have I found cause for subse-

quent removal of the tumor, and have, of course, no deaths to report.

The conservative treatment of abdominal tumors by electricity, massage, and therapeutic agents (ergot, etc.), has received much attention from the profession, but the effects of position alone, *i.e.*, relief from compression, strangulation, and incarceration have, to the best of my information, not heretofore been brought to light.

Position, as in surgery, can be made to play a great *rôle*. It has been attempted by the knee-elbow position, the inverted position, etc. These are, however, too tiresome to be more than of temporary usefulness, and it needs generally a solid and permanent vaginal support—pessaries—to obtain satisfactorily the desired effects, namely, the prevention, palliation, or cure of abdominal tumors.

## DISCUSSION.

DR. FORD, of Utica.—I would like to speak briefly on one point—the influence which this Society exerts on the general profession. This must often be greater than the influence which it exerts on its individual members. I am in close touch with a large number of general practitioners who are attempting gynecological work constantly and fail, and I am impressed very much by the fact that if our discussions are chiefly on abdominal surgery, and on the brilliancy of its results, minor topics being neglected in our discussions and transactions, the impression upon the general practitioner will be undesirable. It is my observation that many men are attempting the more difficult gynecological operations every day. I am certain that I hear of a death from this cause once a week in my region. For there are men—and it is, indeed, a common failing—who, reading the description of a brilliant surgical operation, think themselves perfectly competent at once to do it. They attempt it, and after several failures they become discouraged and drop it. But these failures entail the loss of life, and other women hear of it and stay away from the physician because of fear, when in fact they

might be relieved. Conservative papers like the one read must exert a healthy influence upon the general profession.

DR. A. F. CURRIER, of New York.—I would like to add a word to what has been said by Dr. Ford regarding the necessity of not overlooking minor points in our work. Although this work covers a very extensive field, we cannot afford to slight any portion of it. There was a portion of Dr. Gehrung's paper which could not be attributed altogether to conservatism, and it is with regard to that particularly that I wish to speak a moment. He referred to a case in which he ruptured adhesions, after the manner practised by Schultze, with very gratifying success. Now, this is an operation which is not without danger, and I cannot accept the inference that the manipulations used were entirely unaccompanied by risk. The ability to rupture adhesions by manipulation through the vagina or rectum, where there is fixation of the uterus, must be limited to very few operators, and the success supposed to attend such manipulations is, to my mind at least, somewhat doubtful. I believe that the rule in such cases is that the adhesions are few and of no particular importance as pathological conditions, or else that they are of such extent that their rupture by the method described is practically impossible. I do not speak without experience in the matter. I can recall one case in particular in which I tried faithfully to perform Schultze's operation under anaesthesia, and apparently the woman was relieved. It was not long before she was as bad as ever and having tried other means unsuccessfully for a year and a half, I opened her abdomen and found not only that the uterus was firmly adherent to the rectum, but that the appendages on one side were so seriously diseased that the patient could not have got well without the operation. Therefore I think we ought to bear in mind that it is possible to be too conservative and thus do injury. It is not always possible to determine the condition of the appendages before commencing Schultze's operation. In rupturing adhesions of the uterus we may also rupture the rectum or the diseased and distended appendages.

DR. GEHRUNG.—It would seem that I was understood to have made remarks concerning adhesions which I had not meant to



do. Solid adhesions are very seldom broken up with benefit. I spoke of slight adhesions, complicating malposition of the uterus, ovaries, etc., and constituting secondary pathological changes. It was my intention to show in a general way that when organs or tumors are not permitted to become incarcerated or strangulated, but are released from unequal or firm compression, the tendency to grow ceases entirely in many cases, and partly in others; if, on the other hand, there is such pressure it will tend to make the incarcerated structure more congested and thus stimulated to more rapid and abnormal growth. The idea which I wish especially to convey is that the organs or tumors should be kept free from undue pressure by elevation and support, and if there is no indication for an immediate operation, the patient should be let alone and the tumor will do little or no harm. Many patients are operated upon and the uterine appendages removed, in which moderate success or absolute recovery might have followed the simpler measures which I have just mentioned. I do not say that cases with pus collections should be managed in this way. There is certainly a limit to every procedure. There are many cases which ought to be treated on the conservative plan, either by the means mentioned in my paper or by other means already so well known to the profession.

# THE RELATIONS OF THE ANATOMY OF THE PERINEUM TO THE MECHANICS OF ITS LACERATION.

BY EDWARD REYNOLDS, M.D.,  
*Boston.*

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IN the midst of all the study which has been lavished upon the repair of the lacerated perineum, the profession has, I think, been too easily satisfied with the statement that its production is due to the strain which is put upon the pelvic fascia during the expulsion of the head, and too little occupied with the study of the exact way in which this tension is exerted. It is to the result of some personal observations on this point that I wish to call your attention to-day; and, on account of the necessity for brevity which is imposed upon us by the conditions of our meeting, I wish to confine myself to but two points: first, an attempt to classify the various forms of tear which are constantly met with, into an intelligible system; and, secondly, an effort to explain the occurrence of these variations on anatomical grounds. Incomplete as my conclusions still are, I feel justified in presenting them, on the ground that they are the result of more than five years of constant study in a clinic in which nearly one thousand women are delivered annually by a succession of previously inexperienced men, with the natural result of a very large proportion of lacerations.

At the beginning of my observations I was impressed with the belief that though the crescentic intra-vaginal tear first described by Dr. Emmet in the *Transactions* of this Society

FIG. 1.

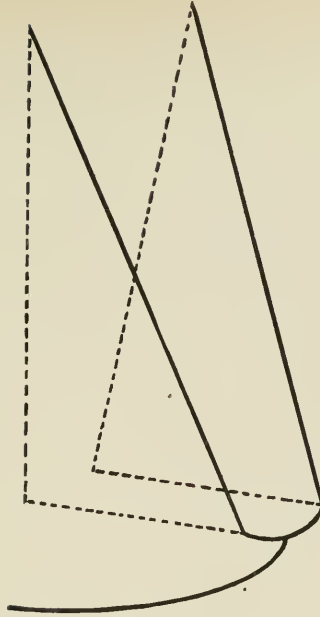


Diagram of the type-form.

FIG. 2.

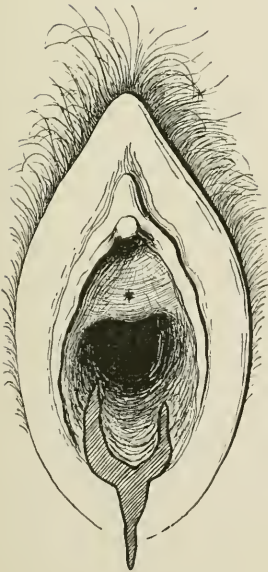
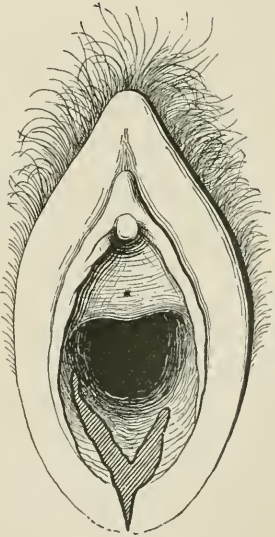


FIG. 3.





for 1883, did frequently occur, a longitudinal tear in the median line was much more common. At first I found a large proportion of these longitudinal tears; but, with increasing experience and better methods of observation, they became steadily more and more rare, until during the last two years I have failed to find a single instance in which I could persuade myself that this form of laceration was present; and I now believe that those of my earlier cases in which I thought it occurred, were mere instances of mistaken observation, due to the use of imperfect methods, and to an insufficient understanding of the alterations of shape which result from the muscular retraction of the distended tissues; and that, if the case is properly studied, such tears will be found to be at least extremely rare, and perhaps non-existent.

The method which I have of late pursued in the study of these cases is no more than that which is ordinarily adopted in secondary operations—*i. e.*, first, to evert the posterior wall of the vagina through the vulva by the insertion of two fingers into the rectum, and then, after carefully sponging the tissues, to draw them together with tenacula, first in one direction and then in another, until the position in which they unite with the most natural appearance and with the least degree of tension is found; but, simple as it is, it requires for success a degree of carefulness and an amount of time which I am inclined to think is seldom given to the subject during the busy moments which ordinarily succeed delivery.

After studying carefully, in this way, a very considerable number of cases, I am inclined to think that all lacerations of the vagina and perineum can be conveniently classified as mere modifications of one type-form which is in itself not infrequent.

This type-form is essentially that which was originally described by Dr. Emmet, and is illustrated diagrammatically in Figs. 1, 2, and 3. It is made up of three essential portions: first, two parallel, longitudinal tears of the vaginal walls, united at their lower extremities by a transverse tear,

which is the second and most essential portion of the typical laceration. The plane of this tear is approximately at right angles to the axis of the vagina, and its situation is just within the constricting band formed by the superficial muscles. To these two portions are added, in the typical laceration, a median tear of the superficial tissues—*i. e.*, of those which lie below the plane of the transverse tear. This type-form in its entirety is, perhaps, of more common occurrence than any other single variety; but, in the majority of instances, it is modified by the diminution or disappearance of some one or more of its component parts.

Although the variety which is found is extremely great, I wish, at this point in my paper, to briefly call your attention to a few illustrations of the more common types. I am fortunate in being able to use for this purpose some reproductions of a set of diagrams which were drawn from life by one of my house officers at the Boston Lying-in Hospital, entirely independently of any suggestion from me, and which are consequently free from any individual bias which I might personally have entertained. Fig. 2 represents one of the most complete instances of the type-form which I have ever seen; Fig. 3, less symmetrical, is a more ordinary instance. Fig. 4 shows diagrammatically a somewhat less common tear in which only the transverse crescentic laceration has been produced. With Figs. 5 and 6 we pass to the form which is perhaps second in frequency, in which one of the lateral vaginal tears has failed to occur, and the corresponding lateral half of the crescent is but imperfectly developed. This form is one which is, I think, commonly but erroneously considered a median longitudinal tear, because the muscular retraction of the tissues, in the swollen state which follows parturition, not infrequently distorts the tear into a shape from which its true characteristics can only be elucidated by very careful observation. Yet, even in these instances, the methods of repair which result from the approximation of the edges of the torn surfaces in such a way as to restore them to the situation from which they

FIG. 4.

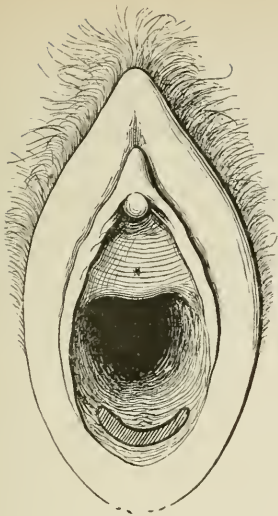


FIG. 5.

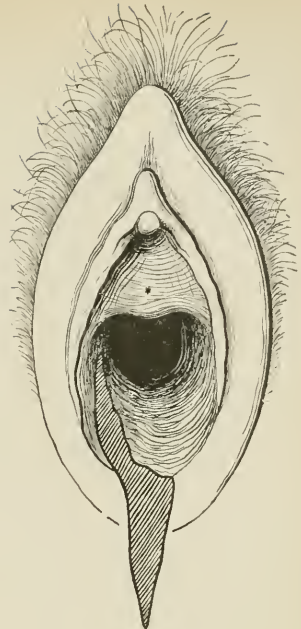


FIG. 6.

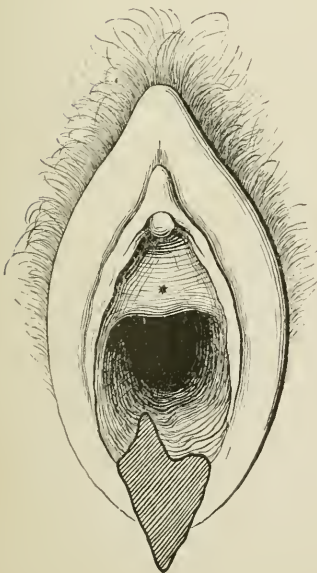
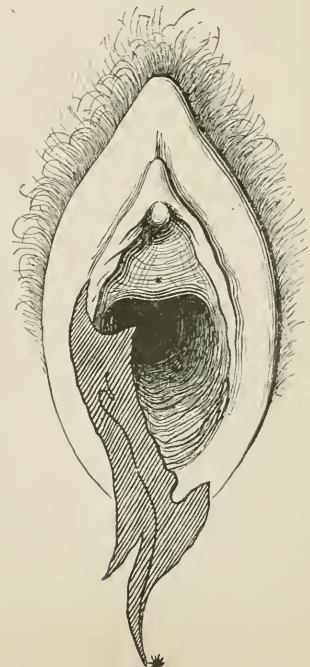


FIG. 7.







are here represented as having been torn apart, has seemed to me to yield invariably much better results than can be attained by their division into two symmetrical longitudinal halves, and their approximation from side to side.

Fig. 7 represents an instance of a very rare form of tear, of which I have seen only four cases. In these tears one of the lateral lacerations is alone represented, and is prolonged downward through the external tissues as a lateral tear well to one side of the anus.

In each of these four cases this form of tear was produced by an unusually rapid delivery occurring at an early stage of labor without previous preparation to the soft parts. Three of the deliveries were operative; one was the birth of a five-pound child by a powerful spontaneous labor at seven months. In each instance the tear began in the fornix as a continuation of a lateral laceration of the cervix.

Another not uncommon tear of which I have no illustration is the transverse rent with both lateral prolongations, but without the superficial tear.

Although many lacerations present at first sight a very irregular appearance, I believe that with a little study all the forms which present themselves can be shown to be but sub-modifications of these five common variations from the type form.

If this attempt at classification of these lacerations is sufficiently natural to be of value, and if my belief in the substantial uniformity in the situation and anatomical relations of all perineal tears is well founded, this uniformity must depend on some definite anatomical arrangement which determines the situation either of the weakest point of the tissues, or of the place of greatest tension along these particular lines. Such an explanation seems to me to be readily apparent from an examination of the arrangements of the fascia and muscles which form the pelvic floor; but I think that it is less likely to be gained by a review of our well-established knowledge of the anatomical entities in the non-

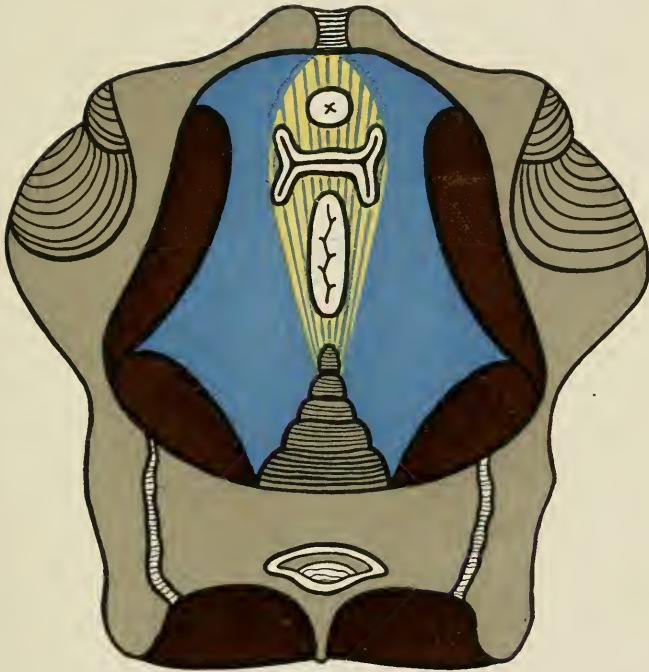
parturient state than by a consideration of their functional behavior during parturition.

In this connection it is of course unnecessary for me to burden the Society with a rehearsal of the ordinary details of pelvic anatomy ; but I may perhaps be pardoned for briefly enumerating the special points upon which this explanation rests. The pelvic floor, when considered in connection with parturition, seems to me to be functionally divisible into two strata, a superior or deep, and an inferior or superficial layer, and I think this division a natural one, because I believe that the mechanical action of these two strata during dilatation can be shown to be not only wholly distinct, but even antagonistic to each other ; and that it is this antagonism which results in the production of lacerations, whenever the elasticity of the tissues is deficient.

The upper or superior of the two strata into which I wish to ask you to divide the pelvic floor, is composed of the two layers of the superior pelvic fascia, with the enclosed three divisions of the coccygeus muscle, and is further reinforced anteriorly by the addition of the deep perineal fascia (the triangular ligament of the male) with the enclosed constrictor urethræ muscles. This sheet of tissue, taken as a whole, forms the floor of the abdominal cavity in the true pelvis, and is broken only by the apertures through which the tubular viscera pass. It is, however, much stronger at the sides of the pelvis than in its median portion, where it is of somewhat feeble construction, even when uninterrupted by the viscera (Fig. 8). It is firmly attached to the lateral edges of the vagina at the point at which this passage pierces it, and prolongations of its fibres pass behind the vagina to form a great part of the upper portion of the so-called perineal body. Its line of force is represented, diagrammatically, in blue, in Fig. 9.

The inferior layer of the pelvic floor is composed, anteriorly, of the bulbo-cavernosus, and the transversus perinei muscles, with the two layers of the superficial fascia which enclose

FIG. 8.



Diagrammatic view of the superior pelvic fascia, from above.



FIG. 9.

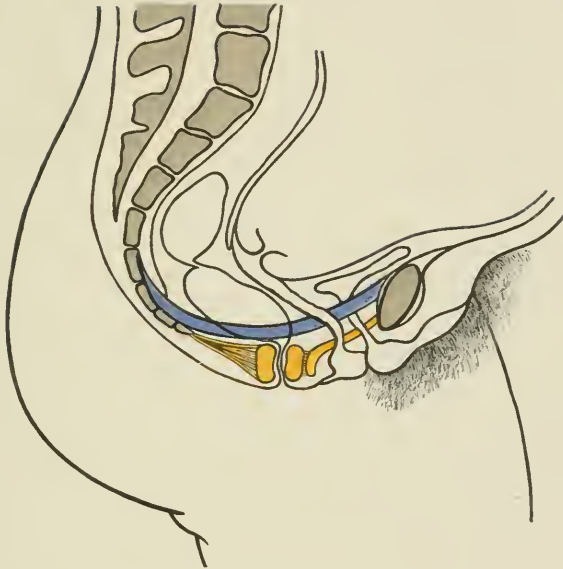


Diagram of the restraining forces.

The force of the upper layer of fascia is represented by the blue line, that of the lower layer by the yellow lines.



them; and posteriorly, of the sphincter ani and the fibres which bind this muscle to the coccyx. It must be remembered that anteriorly, as is stated by Ranney, the superficial perineal fascia is a somewhat firm sheet of non-elastic tissue, which is especially strong at the points where it is reflected over the transverse muscle; but that in its posterior portion it is so slightly developed that the sacral half of this lower layer is in reality composed of but little more than the yielding sphincter ani muscle, the peri-rectal fat, and the external skin. It is drawn in yellow in Fig. 9.

To arrive at the conclusion as to the etiology of perineal lacerations, to which I wish to lead you, it is now necessary to examine separately the action of these two layers during parturition.

When the head passes the cervix and meets the resistance of the pelvic floor, it must first dilate the vagina and the opening in the superior layer, by pushing to each side the stronger lateral portions of the superior fascia, and by putting upon the stretch the weaker central part, at the same time stretching the whole structure downward. This process is represented diagrammatically in Figs. 10 and 11. In the former, which is supposed to be a section through the superior pelvic fascia and vagina, at right angles to the axis of the passage, the stronger lateral portions of the fascia are shown as ending somewhat abruptly in their attachment to the vaginal walls. According to a well-known phenomenon of mechanics, it is probable that if the supporting sling which is so produced is to tear, the separation will occur at one of the two points where the stronger tissues join the weaker, *i.e.*, at A or B, and would then naturally result in the production of the first portion of the typical tear; *i.e.*, the two longitudinal lateral prolongations of the crescent.

As the head advances, either by dilatation of this structure or by laceration of the vagina, it follows from the obliquity of the vaginal axis to the fascia, that the posterior portion is put more and more upon the stretch by the downward and

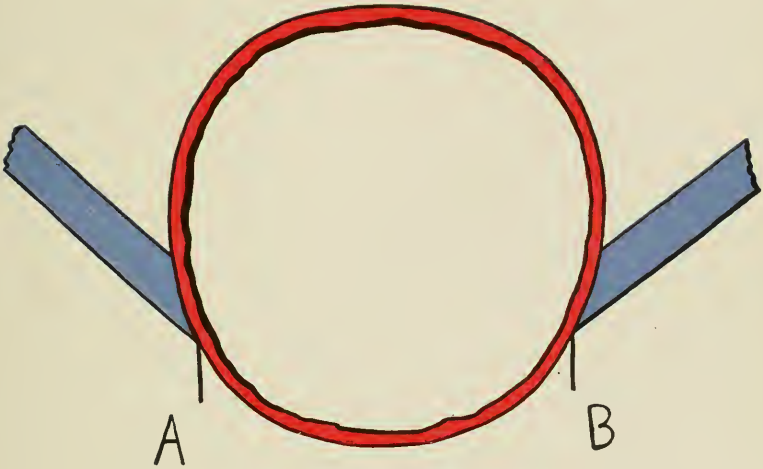
forward progress of the presenting part ; while its anterior half is, upon the contrary, carried up and forward and crowded against the pubes by the same process, as is represented in Fig. 11, in which the posterior half of this segment is represented in blue and the anterior half in red. If then the anterior half of this sheet of tissue is relaxed and the posterior half is stretched, by the process of dilatation, it is evident that the action of the whole may be considered as limited to that of the posterior segment, *i. e.*, to a crescentic hood of fascia, which is eminently well fitted to resist that downward and forward movement of the fourchette with which we all familiar during the stage of expulsion. If now this posterior segment could slip backward over the head, its tension would be relaxed and its resistance to the process of dilatation annulled, and it is the analysis of the force which prevents this, which is the next step in my argument.

The merest glance at the external surface of the perineum during the advance of the fourchette at the end of labor, will demonstrate to the most careless observer that the elasticity of the sphincter ani is so great that the restraining powers of the superficial layer of the perineal floor are limited almost entirely to the action of its anterior half. If, now, it is remembered that the efficient anterior segment of the superficial fascia is connected to the efficient posterior segment of the superior layer only by the comparatively feeble indifferent connective tissues of the perineal body, as is indicated diagrammatically in Fig. 9, I think it will be conceded that the point of least tensile strength is probably situated at this point, and that the diagrammatic view of the restraining forces which is given in Fig. 12 is not unfair.

In this figure, the passages are supposed to be already partly dilated and the perineum is bulging slightly before the head, the escape of which is still restrained by a hood of tissue, whose action may be summarized as that of a Y-shaped band, formed by the union of the posterior segment of the superior fascia with the V-shaped superficial fascia. If, when the



FIG. 10.



Diagrammatic section at a right angle to the axis of the vagina.

The superior pelvic fascia is represented in blue, the vaginal walls in red. The black lines at A and B show the probable position of the lateral tears.



FIG. 11.

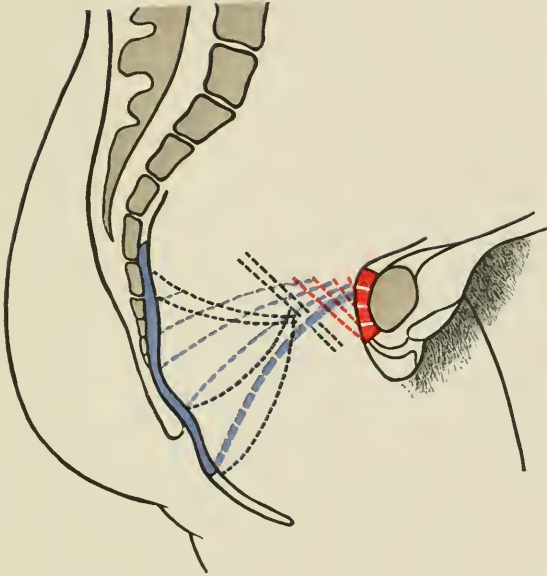


Diagram of the relations of the two segments of the superior pelvic fascia during full dilatation of the parturient canal.

The position of the posterior segment is shown by the heavy blue line, that of the anterior segment by the heavy red line. The broken colored lines show the lines of tension in their respective segments. The broken black lines show the relations of the posterior segment to its normal position.



head is in this situation, the tissues of the perineal body are supposed to yield along the black line A in Fig. 12, there will be an immediate gain in the length of the restraining band, which gain is exactly represented in Fig. 13, in which the dotted black line is an exact reproduction of the position of the colored lines in Fig. 12, while the colored lines are allowed to sink downward and forward by just the amount which is gained by such a separation, which is, of course, the transverse portion of the typical tear.

These separations having taken place, the head is restrained only by a thin hood formed by the superficial tissue, which, unless it is extremely distensible, will then tear along the median line, both because that is the weakest point of the fascia, on account of the decussation here of the fibres from the two sides, and because of the lateral tension exerted by the strong bands of fascia which cover the superficial transverse muscles. This tension is excellently demonstrated in Savage's *Anatomy of the Pelvic Organs*, and has long been received as a sufficient reason for the median situation of the superficial rent.

These explanations seem to me to be sufficient to account for the frequent appearance of the type-form, but even if they are correct to this extent, much yet remains to be said on the reasons for the variation of other tears from this form, and upon the precautions and processes which should be adopted for their prevention and repair. On these points my observations are, however, as yet rather too incomplete for full and satisfactory publication. I can only say that those tears in which the longitudinal element predominates, as in Figs. 5, 6, and 7, seem to be always the result of rapid labors with powerful expulsive forces; while those in which the transverse tear is extensive and the other elements of the type are ill-developed, as in Figs. 3 and 4, follow as a rule upon extremely slow second stages.

I am inclined to believe that when the second stage has been extremely rapid, the lateral wings of the tear are the

primary element in its production ; and that the existence of even one deep longitudinal tear frequently affords sufficient space to permit the expulsion of the head without the production of a well-developed transverse rent, as in Figs. 5, 6, and 7. On the other hand; when the tear follows a very slow expulsion, it is probable that the transverse rent is the primary element, and that its lateral prolongations, which are then seldom well marked, are merely secondary, and are the results of the momentary rapidity of progress which is permitted by the appearance of the transverse tear.

When only one of the upper longitudinal tears is well marked, it is usually found upon the side to which the forehead was originally directed. How far this last fact may be due to the friction of rotation remains to be determined, and the field for observation of the relative frequency of the several forms, in accordance with the varying presentations and with the differing positions of the head, may also afford another interesting point for observation, to which I hope to devote some study in the future.

It is at once apparent, if these views are correct, that the essential element in the repair of all lacerations must consist in the insertion of such sutures as will draw the torn edge of the upper layer downward and those of the lower upward, until they meet at the central point from which they were originally separated ; but the importance of such sutures is so well understood, and the choice of methods for their insertion has been so frequently discussed, that I have thought it best to leave that point untouched, and to restrict myself to-day entirely to the anatomical side of the subject.

FIG. 12.

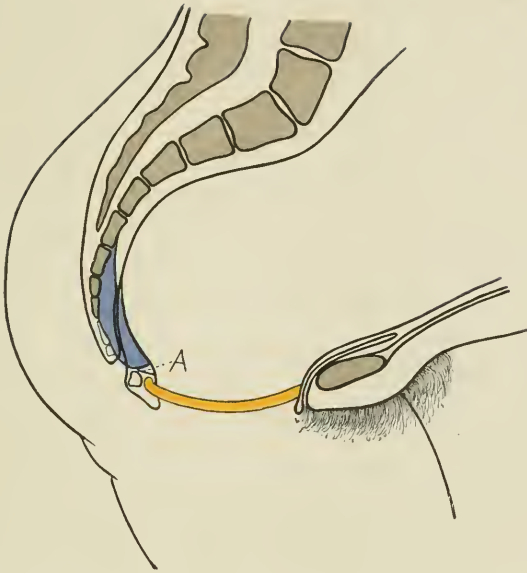


Diagram illustrating the position of the restraining tissues at the moment when the perineum first bulges before the head.

The posterior segment of the superior fascia is drawn in blue, the anterior segment of the superficial fascia in yellow. The black line A shows the situation of the probable transverse rent through the indifferent connective tissue of the perineal body.





FIG. 13.

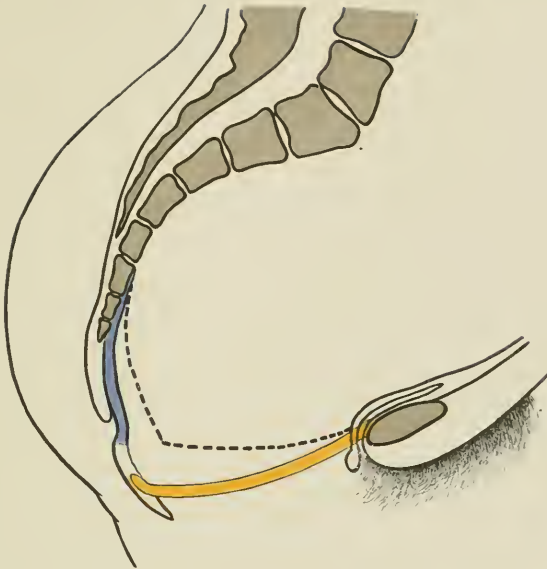


Diagram illustrating the position of the restraining tissues after the occurrence of the transverse tear.

The broken lines are exact reproductions of the position of the colored lines in Fig. 12. The position of the colored lines shows the amount of space gained by a separation to the extent of the black line A in Fig. 12.



## THE TREATMENT OF EXTRA-UTERINE PREGNANCY.

BY F. WINCKEL, M.D.,  
*Munich.*

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WHEN at the present day publications upon the treatment of extra-uterine pregnancy appear, one may feel certain that either the electrical destruction of the foetus (especially in America), or the operative removal of the amniotic sac and contents by means of laparotomy (in Germany almost without exception), will be recommended as the best and only proper treatment.

The morphine injection into the amniotic sac is regarded with a certain amount of pity for him who practises this method—a pity in which reproach for unjustifiable protraction of the case is only too evident.

In the overstrained estimate of laparotomy—which continues to be the favorite method—the testing of the method which the writer has taught for more than a decade is regarded as entirely unnecessary.

A laparotomy is made, and without giving it a trial the morphine injection is condemned on possible and impossible theoretical grounds.

I might waste much time and labor should I undertake to discuss all these grounds, and now the statement is made by a writer<sup>1</sup> that, when an aseptic puncture is made through the abdominal walls into the intestines (as may happen in the

<sup>1</sup> E. Fränkel: Berliner Klinik, November, 1889, vol. xvii.

early stages), and through these into the deeper amniotic sac, an infection of the latter, through the entrance of microorganisms from the intestine into the sac, cannot be avoided with certainty. Only then—when the amniotic sac lies closely against the anterior abdominal wall (which condition exists only after the third to the fifth month)—is this surgical contra-indication to the morphine injection through the abdominal wall no longer present.

Now I should like to ask Dr. Fränkel if he is of the opinion that any medical man, or, let me say, the author, is not able, by percussion and palpation, to recognise coils of intestine over the amniotic sac, so as to avoid that spot for puncture; and, moreover, if he has ever read that the author has, even in a single instance, met this danger in his operations? Certainly, not.

I mention the intestinal puncture only to show that the danger of decomposition changes resulting from the carrying of microorganisms into the peritoneal sac is not at all to be feared. But why should we argue the possibility of an occurrence and its dangers if—as the author wishes emphatically to state—this can be avoided with certainty, and when, indeed, this emergency has never arisen.

Since the last publication of his records, the author has treated two more cases with morphine injections, and would not have referred to this subject again were it not that he wishes to disprove the statements made by E. Fränkel (in his paper), and by Küstner<sup>1</sup> (of Dorpat, in his latest essay), both of whom make objections to this method of treatment. E. Fränkel says (*loc. cit.*, p. 28) that the dangers to the mother have been by no means overcome even when, by this method, the death of the fœtus results and an end is put to the further development of an extra-uterine pregnancy, since, in spite of the discharge of the embryo or death of the fœtus, hemorrhages may take place in the amniotic sac and secondary rupture of

<sup>1</sup> St. Petersburger med. Wochenschrift, November, 1890, 43, 44.

the same, with formation of hæmatocele, or free bleeding into the peritoneal cavity, or peritonitis (Case III.).

To begin with, my experience has led me to this view, that the discharge of the decidua does not by any means prove that the death of the fœtus has occurred. F. Veit, a most competent writer upon this subject, says that a single hemorrhage or the discharge of the decidua may take place without of necessity compromising the life of the fœtus; but repetition of hemorrhages, long-continued attacks of pain, point in most cases to the death of the fœtus,<sup>1</sup> and in these cases *not always*, only *usually*. Moreover, I am convinced that when the fœtus continues to live, a new decidua may develop in the uterus.

Acting under my instructions, one of my pupils,<sup>2</sup> in his dissertation, has thoroughly discussed this possibility, and I do not wish to go more deeply into this subject, because I wish to deal with proofs more intimately connected with my present topic. But I would like to state that such excessive hemorrhages as Fränkel reports—resulting finally in the rupture of the tube—indicate more likely the continuation of the life of the fœtus than does the discharge of the decidua its death.

The only author who has made objections to the use of morphine is Küstner, and these objections are only of a possible case of sepsis; and even now he thinks, and does not dispute, that future experiments can be made with the injection of morphine with little danger to the mother in extra-uterine pregnancy; but then he questions what will become of the ova and amnion after the death of the fœtus in the early months of gestation. He believes he has shown, by four of his cases, that the residue of a two or three months' extra-uterine pregnancy was of voluminous proportions, sometimes the size of a hen's egg; and that, also, the residue of an aborted tubal pregnancy was plainly to be felt

<sup>1</sup> Centralblatt für Gyn., 1889, p. 516.

<sup>2</sup> Lorenz: "Five Cases of Extra-uterine Pregnancy," München Frauenklinik, 1888, p. 67.

after a period of nine years ; and then in his cases, invariably, signs of pelvic peritonitis had shown themselves, necessitating further interference.

It now behooves us to prove that these results do not of a necessity follow the death of the fœtus. In a patient whom I exhibited at the Gynecological Congress at Freiburg, June 12, 1889, I convinced many German gynecologists that the remains of the injected tubal pregnancy dating from February was only the size of an almond, and that the physical examination was painless, showing no signs of inflammation, and the uterus besides the ligaments were freely movable ; furthermore, the same patient, in the spring of 1890, brought into the world a living child ; after this I could not find a trace of the previous fœtus in the right tube, and can assert with certainty that she had no signs of inflammation after the absorption of the fœtus.

The second similar case was that from Dr. Gossman, published in the *Münchener med. Wochenschrift*, 1888, No. 50. This case also was treated by morphine injections for extra-uterine pregnancy, and never after was treated for peritonitis. She conceived in November, 1889, and after the regular period of gestation was delivered, in August, 1890, of a living child. I examined the patient a short time ago ; the internal sexual organs were freely movable, and I found absolutely no trace of the previous extra-uterine pregnancy. The patient was much constipated for some time, but had no evidences or symptoms of peritonitis.

The assumption that just as after the spontaneous death of the fœtus, so also where this result is brought about by the physician—indeed, by the latter method with even greater certainty—this desolated amniotic sac with contents may become encysted in a pelvio-peritonitic pseudo-membrane, as Küstner means (*loc. cit.*, p. 8), is one that may be regarded as proven untenable by these two cases ; with this, of course, all conclusions drawn from the above fall.

Now there is no question that the inflammation of pelvic organs preceding the extra-uterine pregnancy may naturally enough continue after the death of the fœtus, and may be the cause of many complaints, but that the presence of the dead fœtus is the cause of these symptoms cannot be regarded as proven.

A case, in other respects very characteristic, which I operated upon not long ago, shows this :

A patient, aged twenty-eight years, came to our clinic May 20, 1890. She had had two normal deliveries, the last four years ago. Six weeks before admission she had a severe hemorrhage from the genitals without there having been a previous irregularity. The hemorrhage ceased for a few days, then started again, and during the last fourteen days she complained of severe pains in back and abdomen, especially in the region of the right ovary.

We found a tumor the size of a child's head bulging out from the cul-de-sac, the uterus pushed forward and forced somewhat out of the small pelvis. The latter reached above the symphysis, and the tumor, which was of irregular form and consistence, reached almost half-way between umbilicus and symphysis.

We regarded it as a retro-uterine hæmatocele, and noticed, moreover, that it became much smaller in the course of a few weeks; and in front of the left sacro-iliac articulation, a tense elastic tumor was to be felt, which we regarded as the left tube. As tumors were present upon both sides, being made up of various parts which extended posteriorly from the sides of the uterus, the ovaries could not be felt; symptoms of pregnancy were not evident, and particularly there appeared to be no discharge of decidua; we concluded that in spite of the hæmatocele the trouble here was caused by a disease of both tubes, very likely a pyosalpinx with pelvio-peritonitis, and this hemorrhage resulted, perchance, from lacerated hyperæmic adhesions.

This dangerous disease of both tubes was our indication for the laparotomy, which we made July 17, 1891, after a two weeks' observation of the patient.

After opening the peritoneal sac the enlarged right tube was released from numerous adhesions and peeled out without wound-

ing the walls, ligated, and removed with the ovary. It was about the size of a hen's egg. Then the left tube was removed, it being nearly as large as the right. The fimbriated ends were closed. As the ovaries were taken out small cysts ruptured, but neither tube showed at any place evidences of a previous disease.

Out of the lumen of the cut tube we could force out pus, and after endeavoring to grow cultures our efforts proved fruitless.

When we removed the hyperæmic and thickened tube we were much astonished to find in the right tube a two months' fœtus with its membranes, and in the left a hæmato-salpinx with a slight fatty change of its intima.

This patient was cured and discharged from the clinic August 7, 1891. Traces of abscesses were not found in the cul-de-sac; further, the uterus was movable in all directions.

This case was interesting in that the disease of the left tube without doubt was a hæmato-salpinx, and the right side a tubal pregnancy. Whether the retro-uterine hæmatocele was a consequence of the pregnant tube we cannot say; but it can hardly be regarded as probable. It was especially to be noted that the retro-uterine hæmatocele which had developed did not, as usual, result from the rupture of the pregnant tube; indeed, no definite source of the bleeding could be found. Although the left tube was closed, we cannot deny the possibility of its hemorrhagic contents having stood in causal relation to the hæmatocele.

As the amniotic sac and right tube were entirely uninjured, there was no reason to believe that there had been a rupture of either. On the other hand, that the hemorrhagic contents resulted from the tubal pregnancy is rendered likely because, first, the condition of the blood, which showed no compact organized coagula, and then the impossibility of demonstrating chorionic villi in the walls of the tube or in the blood.

This patient was absolutely cured by the laparotomy. But if I had known before that I had a pyosalpinx of both sides to treat, a more conservative plan of treatment would have been used, especially in such young persons—that is to say,



I ought to have opened both tubes, thoroughly cleaned and disinfected, as described by Freund. This method has been always used by me with the best success—*i. e.*, salpingotomy. A direct employment of the Paquelin cautery could be used to loosen the adhesions around the tubes, then the patient would not be mutilated and a possibility of a later conception be not excluded.

Now I should like to mention a most interesting case of tubal pregnancy which I saw not long ago.

Left-sided, intra-ligamentous, fully developed (tenth month) tubal pregnancy which had not been diagnosticated. Position of child R. O. A. Laparotomy, salpingotomy. Extraction of child with placenta; sewing of tubal sac, after *partly* sewing the abdominal wound; healing with a small abdominal fistula.

M. S., aged thirty-nine years, had five children without medical assistance, the last one two years ago. During the last gestation she says she was confined to bed with inflammation of the lungs, followed by inflammation of peritoneum, kidneys, and bladder.

On May 9, 1890, she had her last menstruation, and soon after believed she was pregnant, because especially the abdomen gradually grew larger; and in February, 1891, she had a hemorrhage from the vagina, which was repeated upon the 1st and 15th of March, accompanied with backache, constipation, and frequent and painful micturition.

The patient was not well nourished; breasts were of about medium size; pendulous; colostrum present. The abdomen was 94 cm. in circumference, round, walls rather tense; a swelling of three to four fingers' breadth above the navel; the consistence was unequal. Free fluid could not be demonstrated. The abdomen showed a strong resistance. On percussion, tympanitic tone in the lumbar region. Auscultation negative; vagina short, vertical; os externum at the height of the upper edge of the symphysis; the lips closed, lips transverse.

The body of the uterus enlarged three fingers' breadth over the symphysis in the median line. Behind it a tense, elastic, not plainly fluctuating tumor, the size of a man's fist, developed from

its left side, and with a folding over of the left broad ligament, so that there could be no doubt of the intra-ligamentous position of the tumor.

As I could find no positive signs of pregnancy, there being no certainty of decidua having been discharged, although the first hemorrhage occurred so short time ago that the patient would not likely have forgotten such an occurrence, and though the patient herself thought of a possible pregnancy, I regarded it as an intra-ligamentous ovarian cystoma, as the breasts, in spite of colostrum, as well as the genitals, were pale rather than hyperæmic.

Regarding the laparotomy, which was made May 8, 1891, I will speak briefly: The wall of the tumor over the uterus where I made the incision was very friable, tearing as soon as the tenacula were applied, and letting out a dark-brown fluid. The original incision was made larger, and we found a fully developed child (II. position) R. O. A., macerated in the second degree and tightly compressed. Now we saw why we were not able to feel the child's parts. We had been able to feel only that part of the body of the child lying between the buttocks and the left axilla, the left arm being pushed up behind the head. The head lay behind the uterus, in part in the small pelvis, and in that portion of the tumor lying under it was the placenta, larger than a man's fist, which covered the head, resembling a cap.

After the child, together with the placenta and membranes, were removed, I disinfected thoroughly the tube-sac and endeavored to remove it, but because of the adhesions, especially upon the colon, I saw that by removing this it would have imperilled the life of the patient. I concluded then not to extract the sac, but allow it to shrink. The opening which I had made in the sac was sewn together with fil de Florence, and this was united to the wall of peritoneum. The abdominal wound was closed in the usual manner—*i. e.*, first the approximation of the peritoneum; secondly, the muscular layer, and thirdly the skin and connective tissue. The tube-sac was tamponed thoroughly with two long strips of iodoform gauze, each strip being about 50 cm. long. There was no drainage into the vagina.

The patient rapidly recovered without interruption. The

wound was dressed upon the fourth, ninth, and eleventh days. The temperature was at no time above 38° C. (100.4° F.).

The sac quickly shrank. The middle of June I removed the last fil de Florence stitch. When the patient was discharged, the end of June, there was, just below the navel, a granulating surface about the size of a five-cent piece, the centre of which was a fistula, which secreted but very little and did not in any manner disturb the patient.

By internal examination we found below and posteriorly to the uterus a resistance which was undoubtedly part of the tube.

I should remark that the sac had not been washed out, but only mopped with iodoform gauze.

When discharged the patient felt perfectly well, and shortly the menstruation reappeared.

Many ways lead to Rome. None of those who understand will combat that in this case only the laparotomy was a guarantee of a perfect cure.

What has been accomplished in former cases I have mentioned in my work.<sup>1</sup>

The treatment of our patient was so satisfactory, had I a similar case I should act in the same way.

The necessity of laparotomy in certain cases of extra-uterine pregnancy was proved twenty-seven years ago, when I did my first laparotomy in Rostock; but my experience has taught me to believe that it is not necessary to operate in the first few months of extra-uterine pregnancy, *but resort to injection of morphine into the amniotic sac*, which is *easier and better*. Indeed, better, as the woman is not mutilated; she has both ovaries and tubes remaining, and even the possibility that the tube which formerly was impregnated, after resorption can again perform its functions.

One author has such wonderful success by the use of massage as to remove the fœtus and render the tube capable of per-

<sup>1</sup> Sammlung klinischer Vorträge, No. 3.

forming once more its function. I am afraid this is one of the tales and fables of medical literature.

But should the patient, after the death of the foetus by means of morphine, complain of great physical suffering, then a laparotomy is still possible; the operation is then even less dangerous.

Repetitions of these histories are exceedingly tiresome and will scarcely be conclusive to those who condemn this treatment, therefore I shall only mention that in the last nine months two cases have been cured by morphine injections—the one here in Munich, by my colleague, Dr. Bauchhammer, March, 1891; the other out of Munich, December, 1890. In this patient the discharge of the decidua commenced in September, 1890, when she was sent to me. In the presence of two physicians, upon the 20th of December, 1890, I gave the usual morphine injection just over the ligamentum poupartic-sinistrum. Upon the 4th of January one of the physicians said to me personally: “I have just come from our patient she looks well, appetite excellent, stools regular, and, the most important thing, she has no pains or aches.” The tumor is smaller and by palpation of the abdomen is absolutely without pain. She had but one injection. The second injection is only given if the pains return.

Reflecting upon this, I should like to say that the injection of morphine into the amniotic sac can be made by any practising physician. The extirpation of the sac by laparotomy cannot be made by everyone, and therefore we, as teachers, will advise therapeutically that we shall not monopolize the treatment of anomalies.

Altogether we should take this matter into consideration when we speak of dangerous operative measures, and especially examine before we judge, and not argue upon theoretical reasons which can scarcely be demonstrated.

In this our present time, he is not considered or looked upon as a skilful and great operator unless he has removed an extra-uterine pregnancy by laparotomy.

## DISCUSSION.

DR. JOHN C. REEVE, of Dayton, Ohio.—I welcome most heartily this paper and the information which it lays before the gynecological world. I feel a little personal interest in the matter because I had once (it would seem unfortunately for my reputation) a case of extra-uterine pregnancy which I believed that I cured with electricity. I have been denounced for advocating that mode of treatment to an extent which made me feel that I did not want to publish any more cases should I have them. This paper, and some others which have been presented at this meeting, are particularly opportune, I think, in impressing the fact upon our minds that there are some conditions in the domain of gynecology which can be cured without laparotomy. Now, I believe that laparotomy has improved and extended much since I reported my case before the Society a number of years ago; at the same time I am very glad to learn of this additional proof that there are different roads by which we may arrive at one end.

DR. HENRY D. FRY, of Washington.—It is a settled fact at the present day that killing the fœtus by electricity is a much better method than the injection of any medicinal substance into the sac. The latter has been tried and discarded long ago because of its danger and uncertainty.

The question to-day is whether any treatment is justifiable except prompt surgical interference. If decided affirmatively, then but one alternative is recognized as worthy of consideration, namely, destruction of the fœtus by electricity.

I am much interested in this subject because of a case of extra-uterine pregnancy that recently came under my care at about the seventh week of gestation. The diagnosis was confirmed by Dr. Busey and Dr. Ford Thompson, of this city. I had examined the patient at an early period when no sac was present, or, if present, was too small to be recognized. I did not see her again for three weeks, as she was absent from the city, and in that time a sac had grown to the size of a lemon or larger; it was fluctuating and sensitive to the touch. The typical symptoms of

ectopic pregnancy were present. I tried electricity, being, however, prepared to operate at a moment's notice. The first application of the galvanic current was made on Sunday, August 23d; the second on the day following, and I am sure that it then killed the fetus. The patient stood the current remarkably well, 200 milliampères being passed eight minutes without any complaint. The tumor began to diminish in size, all sensitiveness disappeared from it, and unpleasant sensations were relieved. In five days the sac was one-third smaller; in one week it sank into the true pelvis directly behind the uterus. Now one can only feel a little thickness of the right broad ligament and a small nodular induration behind the uterus. The September period came on naturally and the patient is convalescent.

DR. T. A. REAMY, of Cincinnati.—Anything which comes from Prof. Winckel, a man of so great authority and so honest in his statements, must command our most respectful consideration, our earnest study and reflection. But, believing as I do that in most of these cases the proper treatment is laparotomy, I wish at the same time to place myself on record as holding the view that in some instances laparotomy is not justifiable, and that other methods may be practised.

I rise more particularly, however, to make the statement, first, that I had the privilege of seeing the case reported by Dr. Reeve, and I am perfectly willing to be committed to the positive opinion that it was a case of extra-uterine pregnancy; secondly, that I hail with satisfaction the demonstrated proof offered by such eminent authority as Prof. Winckel, that tubes which have contained pus may recover their function—a doctrine which I have repeatedly confirmed, but which is regarded in certain quarters as heresy.

I am somewhat surprised that no reference was made by the distinguished author of the paper, in proof of his views, to the extensive and brilliant work of our eminent Fellow and countryman, Dr. Polk, of New York, in resecting both tubes and ovaries.

# LAPAROTOMY IN TRENDELENBURG'S POSTURE, WITH EXHIBITION OF A NEW OPERATING-TABLE.

BY CLEMENT CLEVELAND, M.D.,  
*New York.*

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WHAT will probably prove one of the most important additions to the appliances for abdominal surgery is the position which bears the name of Prof. Trendelenburg, of Bonn, and was first published by him in the year 1884.

The object of the position, as the writer understands it, is to so place the body that the intestines will drop out of the pelvis toward the diaphragm, and, at the same time, leave the abdominal muscles relaxed.

The advantages of the position are incalculable. It so disposes of the intestines that they do not protrude, even when the incision is carried beyond the umbilicus.

The operator cuts down to and through the peritoneum without fear of wounding the intestines. After the incision is made, and a flat sponge or pad of gauze is laid upon the intestines, as an extra precaution against their escape, the operator proceeds with the greatest confidence, having the whole field of the operation in plain view. In the horizontal position much of the work is done in the dark by touch alone, and no matter how well educated that touch may be, there is no man who cannot do better work when he has both touch and sight at command. It enables the operator to at once recognize the exact nature of the disease. In the removal of ovaries and tubes, in separating intestinal adhesions and those

about the pelvic organs, in discovering and ligating bleeding-points, it makes what would otherwise be often a formidable piece of work a comparatively easy proceeding.

In the operation of abdominal hysterectomy, the advantages are so great and so essential that I can no longer conceive it possible to do the operation without it.

In packing the pelvis with gauze, or in packing it against the ligated stumps, and down into the vagina from above, after hysterectomy, the position is now almost a necessity.

In sewing up the abdominal incision, the sutures are introduced without danger of piercing intestines or omentum.

In fact, in every operation the laparotomist is likely to be called upon to perform upon the pelvic organs, the work is made easier by this position, and no operator who has once used it will ever be satisfied without having the power of calling it to his aid at any moment.

In the economy of time, so essential to the welfare of the patient, it is a most important factor. To roughly estimate it, I should say that in a majority of laparotomies fully fifty per cent. is saved. This may seem a bold statement to those who are not familiar with the position, but I believe I am not over-stating it.

When you remember the time required in making out by touch alone the conditions one has to deal with in the pelvis, in avoiding intestines and omentum when passing and tying ligatures, in the tedious and trying work of keeping intestines out of the way when hunting for the source of persistent hemorrhage, a clearer idea is gained of the amount of time lost.

Contrary to what might be expected, anæsthetics seem to work well in this position, and I believe that we shall find that chloroform can be administered with much less risk. In cases of syncope from chloroform inhalation, we at once resort to Nélaton's plan of inverting the body as a means of restoration. Whether the continued inversion during the



administration of chloroform will surely prevent syncope, is a question that must be left for the future to decide.

The position presupposes two things—the inclination of the body with head downward, and the complete relaxation of abdominal muscles. To attain this, the patient must be held in the inclined posture, with both thighs and knees flexed.

When Trendelenburg first described the position, it was at once accepted as offering great advantages, and many made use of it by improvising various expedients to attain it. It has, however, never come into general use, apparently because there has not been, until lately, a table especially adapted for the purpose.

In the summer of 1890, at the International Medical Congress at Berlin, Trendelenburg exhibited his table, which was designed for general surgical work. A sample of the table was brought over by Dr. Willy Meyer, of New York, and presented and described by him at the Academy of Medicine, October 13, 1890.

This table certainly accomplishes the work satisfactorily. I was, however, impressed with the idea that it was a little too cumbersome and complex for gynecological work, and was therefore led to devise a table that should be free from these objections.

I want to say here that Dr. Edebohls, of New York, to whom and to Drs. Krug and Willy Meyer most of the credit is due for popularizing the posture in this country, has been operating for the past year on a table of his own invention that gives the position perfectly, and about which I can utter none but words of commendation.

The table I have to present is constructed almost entirely of iron. The supports or legs and the frame-work of the top are made of angle iron, this form of the metal being as strong as the solid, and very much lighter.

The top plates I had intended to have made of aluminium,

but they have not yet succeeded in forming it into plates large enough for the purpose.

To form the legs, the iron,  $1\frac{1}{2}$  inches angle iron, is bent in the form shown in the diagram (Fig. 1), with the angle turned inward. The legs are held together and prevented from spreading by bands of  $1\frac{1}{4}$  inches strap iron (Fig. 2). The frame of the top, made of the same sized angle iron, with angles turned inward and downward, is 6 feet long and  $19\frac{1}{2}$  inches wide. The table, 35 inches high at its centre, is made to swivel in two blocks of brass placed at the tops, or apices of the supports, which allows an alternate up-and-down or see-saw motion.

Attached to the frame on the under side for  $2\frac{1}{2}$  feet of its length, with a depression in its centre of 4 inches, is the drain-pan, having an outlet at its lowest or centre point. This is made to drain only in the horizontal position, as I have preferred to bring the patient into that posture before irrigating, believing that thus all fluid would sink into the pelvis, and from there could be easily sponged out.

Jutting outward and upward from the centre of the upper edge of the frame on both sides are guards 2 inches wide and  $2\frac{1}{2}$  feet long, designed to guide fluids into the drain-pan and to prevent them from flowing over on to the floor or on to the clothing of the operator and his assistant.

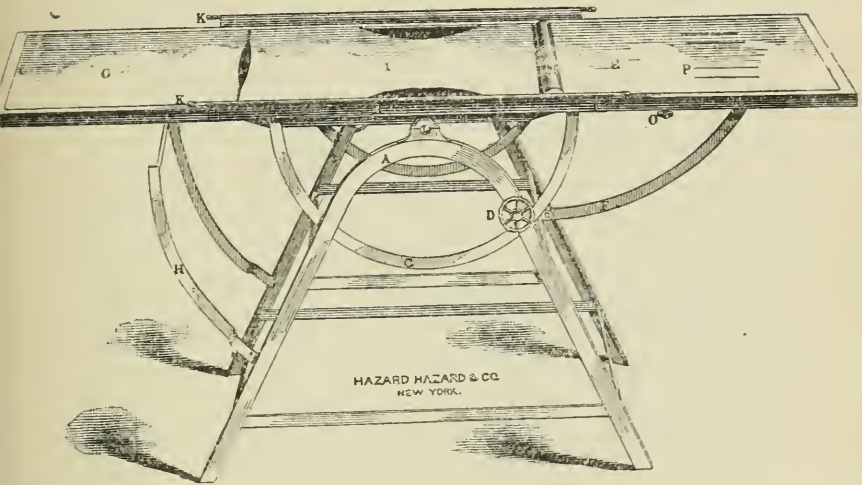
The top, which is movable, is made of plate iron in three sections, hinged together by a simple device that admits of their being readily taken apart. The head-piece is 24 inches long, the centre 19, and the foot-piece 25 inches. Their construction and arrangement may be seen in the diagram (Fig. 1, G, I, E). It will also be seen that the sides of the centre one are cut out in curved sections. This is to facilitate drainage.

The foot-plate is made to swivel about 10 inches from the upper end, and is terminated at its upper end by a cylinder of brass for the bend of the knees or popliteal spaces to

rest upon, without danger of being bruised or injured when raised to give the Trendelenburg posture. (Figs. 1 and 2.)

At its outer end will be seen two fenestræ, through which straps are to be passed and then lightly secured about the ankles to keep the patient from slipping. The diagram (Fig. 2, E) will possibly explain the working of the plate better than words.

FIG. 1.

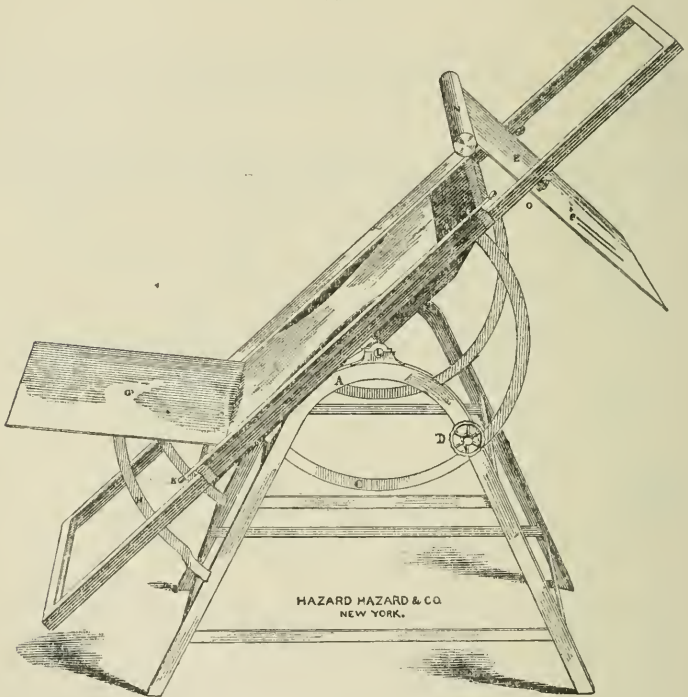


Attached to each side of the frame, in the position seen in diagram (Fig. 1, C), is a semicircle of one inch strap iron, which is for the double purpose of adding strength to the top and providing the means for holding the patient at any pitch desired, this latter being attained by the aid of wheels (Fig. 1 D), which are for the purpose of clamping the semicircle at any point of its surface against the legs or supports.

From the legs at the head of the table, curving outward and upward are two strong iron bars, held together by an iron cross-bar (Fig. 1, H). Upon these the head-plate of the top strikes, and is held in a horizontal position, when the

frame is tipped to give the Trendelenburg posture. This is seen in Fig. 2. On the under surface of the foot-plate, nearer its lower end, is hinged a curved bar of iron, which is again hinged at its other end to one of the cross-bars of the legs. It will be readily seen that this draws the foot-plate into the position seen at Fig. 2, when the top is tipped.

FIG. 2.



In the construction of the table the aim has been to secure perfect cleanliness and ease in handling. It can be readily taken apart to cleanse, and being all of metal can be scrubbed and deluged with water, as it is made of thickly galvanized iron.

When the table is to be used it should be first thoroughly scrubbed and washed. A pad about three feet long, made of

folded blanket and covered with rubber sheeting, is bound by strips of gauze to the centre of the middle plate. This is to protect the back of the patient. The patient is placed upon this either before or after being anaesthetized, with the knees directly over the cylindrical end of the foot-plate. The legs should be separately covered with blankets. The ankles are then loosely strapped to the foot-plate. The abdomen is then washed and sterilized towels applied in the customary way. The operator stands on the patient's left, with the assistant opposite. To throw the patient into the Trendelenburg posture, the operator and his assistant each grasps with the left hand the frame at a little distance to his left, and with the right unclamps the wheel on his respective side. The operator then lifts with the left hand, while the assistant depresses the frame with his, and the patient is thus thrown into the position desired. It is there held by turning the wheels to the right till they are firmly clamped.

If it is required to pass the catheter, or to draw down the end of the gauze, with which the vagina is packed after supra-pubic hysterectomy, this can be done with ease, as there is sufficient space provided for the purpose between the foot-plate and the nates, when the patient is in the Trendelenburg position.

This table can be used for all other gynecological work, as either end will sustain a weight of over 250 pounds without tipping, when the clamps are firmly applied.

Whether I have succeeded in making a table that fulfils the requirements I shall leave to others to decide, and will present it for your inspection with the hope that your criticism will suggest ways in which it may be improved.

[It has been made for me by the instrument department of Hazard, Hazard & Co., New York.]

## DISCUSSION.

DR. WILLIAM GOODELL, of Philadelphia.—I have just returned from Berlin, where I saw for the first time several operations performed in this position. I was struck with some of its advantages. Indeed, I was so much impressed by them in certain conditions, that I purchased a German table provided with Trendelenburg's attachment. It has shoulder-pieces to restrain the body from slipping down, and in that respect is superior to Dr. Cleveland's table.

As Dr. Cleveland has stated, it is certainly a great advantage in some cases to have the intestines gravitate toward the diaphragm, and also to see the parts operated on. I do not fully agree with him that this position relieves one of danger of incising the intestines or the bladder. Certainly one has to be cautious in making the first incision lest one should enter the bladder, for it falls astonishingly low down toward the umbilicus. It seems to me that in this position, ether ought to be given warily to plethoric persons, or to those with cardiac lesions; for ether tends to produce congestion of the brain and of the lungs, and Trendelenburg's posture has the same effect. I think, therefore, it would be better in such cases to employ chloroform, which exerts a contrary effect. The cases which most loudly call for operation in this position are those of exceedingly adherent tubes and ovaries, in which the bowels are involved, or in which the danger of deeply seated hemorrhage is great. It might also be employed in hysterectomy if the tumor is not a very large one, but if bulky I would prefer the ordinary position, since then the room would be ample for seeing everything needful.

I witnessed several operations in this position, and was able, standing at a distance of perhaps six feet or more, to look in and to see the bladder, tubes, ovaries, and the whole pelvic contents except the intestines, which had gravitated toward the diaphragm. It is unquestionably a very superior posture for occasional complications, but I do not expect to use it for every laparotomy. I shall, however, put it into practice for the first time on a case to

be operated upon to-morrow, and another on Saturday, at my private hospital.

DR. SUTTON, of Pittsburg.—I wish to corroborate the statements made by Dr. Goodell. I have been operating in Trendelenburg's posture since May. I use the Edebohls table, which I procured at the meeting of the American Medical Association, but before I got this one I used two ordinary wash-benches, put them together, nailed a board across, set them on a table with the legs down on one side, and was thus enabled to place the patient on an inclined plane. It answered the purpose admirably.

An advantage which Dr. Goodell did not mention is the fact that there is a great deal less hemorrhage about the pelvis. So far as ether is concerned, I have not used it for years past. I employ chloroform exclusively, and very little of that is usually necessary. No unpleasant effects have occurred, and, operating in Trendelenburg's posture, I feel much easier in the use of this anæsthetic.

DR. GEORGE M. EDEBOHLS, of New York.—I early recognized the advantages of elevating the pelvis so as to throw the abdominal viscera toward the diaphragm, out of the way of the operator. The advantages of the position, which have been so eloquently enumerated by Drs. Cleveland and Goodell, I can indorse from an experience of about two years. I began using it in 1889, first using upon my older operating-table various devices for raising the pelvis, and afterward, or about the beginning of this year, modifying my table or reconstructing it entirely so as to make use of the Trendelenburg posture with the greatest ease, at the same time permitting operations of all kinds upon the pelvis and vagina. So that my table, which has been referred to, is a laparotomy table for the Trendelenburg posture and also a general gynecological operating-table.

DR. CLEVELAND.—I merely wish to state that I did not advocate this position for all laparotomies. I would say further that this table has one fault which will be corrected, namely, that it allows the weight to rest partly upon the neck, instead of upon the shoulders. As to drainage, I prefer to drain in the horizontal posture, as then all the fluids will gravitate toward the pelvis and can be better removed. I might add that this table can be used for all gynecological work.

## THE ELECTRICAL TREATMENT OF UTERINE FIBROMATA IN ENGLAND.

BY GEORGE E. KEITH, M.D.,  
*Chicago.*

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HAVING had an opportunity of studying this subject in Great Britain, it occurred to me that a brief statement of my opinions, based upon personal observations, might be of some interest to the members of this Society.

I had an opportunity of examining the first one hundred cases treated by Dr. Keith and Mr. Skene Keith, and also seeing the treatment and results. I have also studied quite a number, but not all of the subsequent cases.

I have endeavored to compare these results with the results obtained by hysterectomy and removal of the ovaries by the Keiths and other surgeons in Great Britain, and the conclusions that I have drawn are vastly in favor of the electrical treatment. One thing is certain, and that is, I have become thoroughly convinced that there is room for all methods of treatment of uterine fibromata, and that no one method should be practised to the exclusion of the others. This is also the opinion held by Dr. Keith. It appears to have gone abroad that he has abandoned hysterectomy since he has taken up the treatment by electricity. This is a great mistake. He still operates in suitable cases; to my knowledge he has operated three times in the last six months; but he does believe that electricity will cure the vast majority of cases, and thus will guard against the necessity of hysterectomy in many.

There is not any doubt that the operation of hysterectomy



is frequently performed to remove a tumor which is giving little or no trouble. Such a case I saw in London before leaving. The operation was performed by one of the best known abdominal surgeons of the day. The case was one of a woman fifty-one years old, and the history given by the local doctor was one severe hemorrhage. The patient looked well, but, nevertheless, a tumor less than three pounds was removed from her. The tumor is there, and the woman is forgotten. She is told, perhaps, that the risk is ten per cent., and that ninety in the one hundred recover. She thinks of the ninety, and may be, and sometimes is, much astonished to find that her chance of dying is as much as one in ten.

It would be interesting to know the mortality after hysterectomy in the last five years, and the ages at which the operation has been performed.

The rival methods of treatment are hysterectomy and removal of the ovaries on the one hand, and treatment by electricity according to Apostoli's method.

If the merits and demerits of these different treatments be examined, we will find that hysterectomy has in its favor, when the patient does not die after operation, the fact that the tumor is done with for all time, and that convalescence is rapid; the ulcer left by the stump, when the extra-peritoneal method is used, healing in six weeks on the average, or when the stump is left inside, the patient is able to go home in three weeks. Within a year she should be quite well and strong.

The disadvantages to be set off against these are: first, the mortality—for nothing can ever make up for a death; second, the melancholic condition into which patients not infrequently fall; and, third, the fact that the life of an ordinary fibroid is limited, and if the patient be well up in years, she will probably in a few more become gradually well and strong.

It can hardly be imagined that any symptoms can justify the performance of a dangerous operation like that of hys-

terectomy, at the age of fifty-one, for an ordinary uterine fibroid.

Is, therefore, a surgeon justified in allowing a woman to run a risk, which neither she nor her friends can ever fully understand, for the sake of the few years of discomfort or invalidism or even more aggravated symptoms?

The removal of the ovaries stands on a very different footing from the operation of hysterectomy. Its advantages are that it is either a very simple proceeding or an impossible one, the impossibility being due to the position of the ovaries or the tumor.

In all other cases there is little difficulty, and anyone who has good success in ovariectomy ought not to have a greater mortality than one or two per cent. It does not require much experience to recognize the impossible cases, but only after the abdomen has been opened. The disadvantages are that it may fail, either because it is impossible to remove the ovaries, or even when the whole of the glands have been supposed to have been removed.

The chief objection, however, and this especially in young women, is the mutilation and subsequent impaired health.

The advantages of electricity in the treatment of fibroid tumors, after Apostoli's method, are the almost complete freedom from danger and the maintenance of the characteristics of the sex. When one thinks of the numbers of uterine tumors that have been treated by electricity in the last few years by gentlemen more or less skilful, but who had all to go through their apprenticeship at this kind of work; and considering the strong dose of electricity often passed through the tumor, the wonder is, not that there have been a few deaths, but that there have not been many more fatal cases. It must be kept in mind that the electrical treatment is in its infancy—it is not yet ten years old—and that results ought to be compared with the early results of hysterectomy—fifty per cent. or more. It is this death-rate that ought to be put alongside the practical percentage of the electrical treatment.

By the time that the electrical treatment is as old as the operation of hysterectomy, I venture to predict that this fractional death-rate will have vanished.

The disadvantages are that, except in the case of small growth, the tumors do not entirely disappear, and, secondly, that the treatment takes time, though it will be shown that this falls more heavily on the surgeon than the patient. I believe that there are not many women who have suffered from the discomfort, illness, and misery, due to the presence of an active uterine fibroid, who would not be satisfied to be symptomatically cured, even although an inert mass be left in the abdomen, if the risks of operation were fairly put before them. But women do not, as a rule, have the facts fairly stated when they are told that electricity is useless, and worse than useless, nor, as has been stated before, do women gain much information from a percentage mortality.

When the operation necessary is the removal of the ovaries the case is greatly different, for the mortality following this operation ought to be very small; and I consider it justifiable to give the patient her choice of which treatment she will have, after she understands that a cure is as certain one way as the other. To the patient the saving of time is apparent rather than real. A hysterectomy patient has to remain in town for six weeks. During those six weeks she lives in one or two rooms, has few visitors and little pleasure. For the best part of six months she is not fit for much, and is probably a year in fully regaining strength, if she ever does.

The electrical treatment takes three months, but while it is going on the patient can attend to her duties and enjoy life to the fullest extent on non-treatment days. At the end of the three months she is, as a rule, in much better health than she has been for many years. Improvement in the general health will go on usually for six months, and sometimes the tumor will continue to diminish for one or two years after cessation of treatment and before there is any sign of the menopause.

There are many ways of treating tumors by electricity, but there is only one that is at the same time safe, certain, and simple—that of Apostoli.

I am fully aware that you gentlemen are familiar with Apostoli's method, but there are some points in the treatment on which I have noticed considerable difference between some American and British practitioners. I may, therefore, be pardoned if I give some of the details, as practised on the other side, that may differ from the practice in this country.

The action of the current is twofold. There is a certain amount of chemical cauterization at the internal electrode, due to the result of the electrolytic action, and, secondly, there is the action of the interpolar current. On the first of these I am inclined to lay little stress, and, while this action is of undoubted value, it appears to me more of a curetting action, and that if there were not some decided action on the tumor itself, a reappearance of the bleeding would, in most cases, result.

In what manner the passage of an electrical current acts on the tumor, it is difficult to say. One thing, however, does happen, and that is a reduction of the arterial blood supply, with starvation of the tumor. To call Dr. Apostoli's treatment, therefore, electrolysis of fibroids is a confession of ignorance. There is a certain amount of electrolytic action. It cannot be avoided.

Before considering how the treatment is to be carried out, one word must be said about the operator. They are or they ought to be gynecologists and skilled in abdominal surgery. They manipulate gently and are able to pass a sound without causing pain. They thoroughly appreciate the advantages of asepsis. They understand something of electricity, and can rectify any defect in their apparatus.

When the question of an internal electrode comes to be considered, there is some room for difference. The choice of the electrode, when the positive is being used, will depend to some extent on how much importance is placed on the local

electrolysis. When the chemical cauterization of the whole lining membrane of the uterus is desired, the electrode must be of such a size that this surface be acted on either at once or in sections, and naturally the larger the electrode the less strong will be the current at any one spot. When the action of the interpolar current is chiefly desired, a small exposure of sound is of advantage, for in that case the current is concentrated in its passage through the tumor toward the external electrode, and at the same time there is a stronger chemical caustic result at one part of the mucous membrane. In cases having a large uterine cavity, of say ten or twelve inches in depth and proportionately broad, I believe it is best to trust mostly to the interpolar action, and to have a small exposure in the uterus, the uncovered position of the electrode being applied to those parts of the cavity where fungosities mostly collect, *i. e.*, the angles and sides where there is not much pressure. In this manner the maximum of interpolar action is obtained, and also a strong chemical caustic action where it is most required.

The electrode is made of gold, platinum, or carbon, and it is rigid and not flexible. When a flexible sound is used, it is impossible to know where the point is, and the argument in its favor, that it is more easy of introduction, is simply little more than a confession of unskilfulness. Dr. Apostoli uses either a platinum sound that can be exposed to any extent in the uterine cavity, or a sound with a short carbon head. As convenient as any is an instrument with a platinum point of much the same shape and size as the late Dr. Matthews Duncan's ordinary uterine sound, having insulated the stem with vulcanite.

When the negative is to be the internal electrode, the sound, which need not be of platinum, is either passed into the uterine cavity, or, in some cases, the tumor is punctured from the vagina. In the former case the choice of the sound is governed by much the same reasoning as when the positive is used. If the tumor is to be punctured, in those cases where

the os cannot be reached and where there is a mass of the growth in the pouch of Douglas, the vagina is specially well syringed with corrosive sublimate solution, a spot selected where no artery is to be felt, and the needle, insulated by a celluloid sheath to within at least half an inch of the point, pushed boldly in. After the application the vagina is again washed out, and a pad of antiseptic gauze pushed against the puncture opening. In ordinary cases this antiseptic dressing is dispensed with, but the vagina must, on every occasion, be made surgically clean. It is usual to make the applications in the office, and, after resting for some time, the patient can go home, but she should do little for the rest of the day. In the very bad cases of hemorrhage it is not possible to do this, and in these cases the treatment should be carried out while the patient is in her own bed. If there be any doubt as to whether the treatment should be carried out at home or not, it is best to avoid the risks and do it at first in bed, then, if improvement be rapid, the patient can have it like the rest. At the commencement of a course of treatment, even in those who are comparatively well, it is most inadvisable to allow a long journey; a drive of three or four miles ought to be the limit. After eight or ten applications have been well borne, a journey of an hour or an hour and a half is allowable, though not advisable.

In all hemorrhagic cases, and also when there is much pain, the positive is used inside the uterus; when the symptoms are due chiefly to the size of the tumor, the negative is used. The negative is used with caution, and an application is never and under no circumstances made should the patient feel chilly or out of sorts. The passage of the current is looked upon as an injury to the tumor, and everyone can understand that a blow delivered before a former one has been recovered from may do much harm. The tumor is also in a more active condition than it has ever been before, and must be treated with some consideration. We have thus a guide to tell us how often the application can be made, and, while

most women can stand it every second day, there are those who get more good when a longer interval than one day intervenes between each sitting. The strength of the current employed is the maximum that can be borne by each patient without causing pain.

Everyone is told that, if the application is painful, it is her own fault, as she has only to ask to have it reduced. The difference between pain and comfort is not, as a rule, more than ten to fifteen milliamperes, and sometimes not so much as five. The possible gain is thus slight, and the possibility of loss is by no means little. The length of each application will vary from five to ten minutes, and the average number is thirty—the exact number depending on the age of the woman and on the strength of the current. There is no universal number, for no two uterine fibroids seem exactly alike, and the full result of the treatment is not seen for at least three months after its cessation.

There are some cases where operation is to be recommended. This must be insisted on, for the opponents of electricity are in the habit of saying that the advocates of the treatment decline all operative procedures on all occasions. It is a poor man who has but one line of treatment, whether by operation or by electricity. Hysterectomy is advised in large fibrocystic tumors, and also, perhaps, in those surrounded by free fluid; removal of the appendages, when the ovaries and tubes are seriously diseased, especially if there be any sup-puration.

#### DISCUSSION.

DR. WILLIS E. FORD, of Utica.—At the meeting of this Society last year the question was raised whether there were any actual cures by the use of galvanism in cases of fibroid tumors. During the year I have looked up some cases so treated by me the past six or seven years, and I can materially strengthen the statements which I made at the former meeting. That is to say, my observation has shown that a large number of cases of small

fibroids are cured, and that very large intra-mural growths which extend beyond the umbilicus and touch the ribs are considerably lessened in size and do not begin to grow again. I believe that in these dangerous cases of very large fibroids galvanism promises more than does hysterectomy. I say this, not because I am afraid of cutting. Still, I have never saved one of these patients with large and dangerous fibroids by hysterectomy, and I have never seen anybody else save one. Here I do believe is a field for electricity, provided, of course, there is no evidence of pus accumulation in existence or likely to be set up by the use of galvanism. I remember one case in which the patient's girth was fifty-seven inches; under the use of galvanism it receded twelve to fourteen inches, and the woman continued at her housework, but finally drifted to New York, and, in spite of the fact that the growth had not increased in size, she was operated on and died. I have operated on one or two cases of large fibroids and the patients died. As to small fibroids, if they can be safely removed by hysterectomy, they can be more safely treated by galvanism. But I do not believe that it is safe to use a strong current in these cases at your office, any more than it is safe to do any surgical operation of importance there. It is safer for the patient to be in a hospital, and it requires less of the surgeon's time. Classify the cases, let the nurse prepare them properly, and every third or fourth day you can spend an hour using galvanism, accomplishing much while losing little time. I wish to repeat what I stated last year, that the curative power of the current depends upon the *volume* rather than the *voltage*. I have made some experiments to show that the volume of the current is what produces chemical decomposition and consequently curative results.

DR. E. STANSBURY SUTTON, of Pittsburg.—I did not intend to discuss this paper, but the last gentleman expressed views so diametrically opposed to my own experience in hysterectomy that I cannot refrain from replying. In doing supra-vaginal hysterectomy I prefer a large tumor; if I should desire such a hysterectomy to fail, I would select a case with a small tumor. A few years ago Kœberlé said to me: "You can perform supra-vaginal hysterectomy for large tumors with almost uniform success, for small tumors very rarely."



If you are going to perform supra-vaginal hysterectomy, the first thing to consider is the question of a pedicle, provided you want to adopt the extra-peritoneal method, the one which, up to the present time, has proved to be much the safer. Now, you cannot get a good pedicle unless you have an enlarged uterus; hence a tumor which has enlarged or stretched the uterus is pre-eminently best. If you are to remove a small tumor with the uterus the safest plan is that of Eastman, of Indianapolis, or of Martin, of Berlin, to remove the entire cervix.

Now, as to electricity. I have tried it. I have failed with it. I have no hesitation in saying that so far as the application of electricity for the removal of fibroid tumors of the uterus, in America, is concerned, it is an absolute piece of rot. I have seen these very tumors which men talk of removing by electrolysis with cavities in them containing pus, or large quantities of gelatinous fluid, or all kinds of fluid, and I cannot divine how it is possible to remove these great fibro-cystic masses by a few applications of electricity per vaginam.

I have treated a good many cases of fibroid tumors with electricity; I have arrested the hemorrhage and have reduced the uterus in size; when the menopause was approaching the hemorrhages did not recur, the tumor kept on receding, and the woman was deluded into the belief that electricity had cured her. To be brief, I would say, that given the choice of saving the life of a woman by supra-vaginal hysterectomy or by punching at her with a battery and electrodes, I would take supra-vaginal hysterectomy every day of the week. In cases of small fibroids I prefer myotomy, when possible, or removal of the ovaries and tubes.

DR. WILLIAM H. BAKER, of Boston.—I wish to place my views on record, as this subject is brought up from time to time before the Society. I would say that electricity for fibroids has, in my hands, proved a success. I am well satisfied with this treatment in certainly nineteen cases out of twenty; the twentieth case will come to hysterectomy.

DR. A. P. DUDLEY, of New York.—I do not wish to take up the Society's time, but I cannot sit still and let this subject go by without saying a word. I had the pleasure of spending

two weeks with Dr. Apostoli this summer, and of studying his cases very thoroughly. He was exceedingly kind to me, allowing me to get a good insight into his work—the best of it and the worst of it. Although I had before talked a good deal against electricity, I am now ready to turn right about and talk for it when I see that there is good in it. I wish to say that Dr. Apostoli does not believe in electricity in the case of fibro-cysts; I do not think that he ever did. Those cases he sends at once to a surgeon, for he has no hospital appointment. But I do say that he relieves symptoms. He does not claim to cure cases of fibroid tumor in the sense of causing the tumor to disappear entirely, but if he relieves the symptoms which brought the patient to him, gives her a comfortable life, even though she may carry an enlargement in the abdomen, he considers that she is cured of that for which she sought relief. I saw a patient come to his clinic who had been absent four years; she had had a tumor which pressed the ribs out of shape. There had been hemorrhage which almost cost the patient her life, and there had been pain. She was relieved of pain and hemorrhage by the use of electricity at the hands of Dr. Apostoli, and had not returned for four years. She came back then because she had been having a little pain. His methods of application are, to be sure, routine, but not so the cases. He does not give the same amount of electricity to all patients, but grades it according to the case. Although I was sceptical regarding his treatment until I saw his work, I can now say that the man who attempts to knock Dr. Apostoli down has a hard piece of business before him, for he is alive to everything that is being done. He has plenty of assistants, is certainly expert in diagnosis, and I may express the opinion that the results which have been disastrous in the hands of other men have been due to errors in diagnosis. According to the diagnosis so does Dr. Apostoli discriminate as to the kind of treatment to be given, the strength of current to be applied, and its frequency. I would say, then, that there is a good deal in electricity, especially for intra-uterine and peri-uterine disease, and in the case of fibroids for the relief of symptoms and for making life comfortable.

DR. A. J. C. SKENE, of Brooklyn.—I wish to say a word regarding the remarks of my friend Dr. Sutton. Perhaps the

extreme heat caused him to speak rather warmly. At any rate, I believe that when he reads the report of what he said, he will feel like taking some of it back. If I wished to discuss the subject on Dr. Sutton's ground I would put in opposition this fact, that the death-rate in New York and Brooklyn from hysterectomy for the cure of fibroids is greater than the death-rate from fibroids with or without other treatment than hysterectomy.

DR. SUTTON.—That is an ingenuous remark for one of the surgeons down there to make.

DR. SKENE.—I do not know what the record is in Dr. Sutton's city, but I presume it is the same as ours. That is the record with us, and if the treatment of fibroids by electrolysis in this country is as Dr. Sutton says, then the treatment by hysterectomy must be no better.

DR. KEITH.—I have very little to add. Dr. Skene has pretty well taken the words out of my mouth in his reply to Dr. Sutton. I think that the latter gentleman made a very unfair criticism of electricity. It is not the way to get to the bottom of the method to call it "rot."

## DIABETES MELLITUS GRAVIDARUM.

BY HENRY D. FRY, M.D.,  
*Washington, D. C.*

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GRAVIDITY increases the susceptibility of woman to certain diseases, and often changes the type of the malady by accentuating its dangers. The physiological changes in the blood, in the secretions and excretions, and the nervous and physical alterations of normal pregnancy, prepare new soil for the development and growth of pathological conditions.

The consideration of changes in the urinary excretion is generally limited to the danger of convulsions. The presence of albumin and casts, with low specific gravity and deficient elimination of solid ingredients, are the changes which warrant such conclusions.

Attention, at present, is claimed by the importance of different alterations: increased flow of urine, increased specific gravity, and the presence of sugar. Augmented flow of urine, with consequent low specific gravity, is considered a normal condition of pregnancy. Also, the presence of sugar in small quantity is found in one-half of all pregnant women. All nursing and lying-in women have glycosuria, and the proportion of sugar in the urine bears some relation to the activity of the mammary glands. Diabetes insipidus has been observed during, and apparently dependent upon, pregnancy. Conjugal diabetes is described as a form of the disease affecting husband and wife simultaneously. Under the title of climacteric diabetes, Lawson Tait describes a special form of the disease which begins at or near the menopause, and,

after lasting several years, terminates in recovery. The amount of sugar excreted is said to be large, but the general health is unimpaired.

Physiological glycosuria and different forms of diabetes must not be confounded with diabetes mellitus gravidarum. Under the head of "Puerperal Diabetes," Matthews Duncan reported<sup>1</sup> several cases of his own, and as many others as he was able to collect. The report comprises the histories of 22 pregnancies in 15 women, and a study of these contributes mainly to the deductions formed in the present article.

The following case came under the observation of the writer :

*First pregnancy and labor normal; diabetes developed about the fifth month of second pregnancy; death of child at seventh month; premature labor; death of mother on fifth day.*—Mrs. P., aged thirty-one years; secundipara. Family history free from gouty or rheumatic tendencies. Her father and mother are living and in excellent health. Of her sisters, all of whom are married, the eldest has four children; the second sister had two children, and lost one in infancy; the third sister had five children; the fourth, two, and is now pregnant with her third.

Mrs. P. gave birth to her first child after a normal pregnancy. Subsequently her health remained good, but she was unable to nurse her baby, as the milk did not agree with it. During the summer of 1889, and the following winter, Mrs. P. was thinner than usual, but attributed the loss of weight to constant care of the infant. She was considered vigorous and healthy, and frequently boasted that she did not know what it meant to be tired.

In June, 1890, accompanied by her husband, she went to Europe. About that time she became pregnant again. She returned to America in August, much benefited by the journey, and came to her home in Washington, October 1st, in excellent health and spirits. Shortly afterward she noticed, for the first time, that she was greatly troubled with thirst, but attributed it to the warm weather. Frequent desire to pass urine next

<sup>1</sup> Trans. Obstet. Soc. of London, 1883, vol. xxiv. pp. 256-285.

attracted her attention, and this symptom increased until the middle of October. During the latter part of that month she improved, but complained of being easily tired and had great difficulty in walking. In the latter part of October, and twice during the early part of November, she suffered from what were supposed to be bilious attacks.

The patient first came under the writer's observation on November 18, 1890, complaining of severe headache, slight nausea, and constipation. These symptoms were relieved in a few days. A specimen of urine which had been requested for examination was sent on November 23d. Seventy-four ounces were passed in the twenty-four hours; specific gravity 1045. There were no casts or albumin, but it contained 9 per cent. (nearly one-half pound) of sugar. Inquiry now, for the first time, elicited the existence of thirst and polyuria. Dietetic and medicinal treatment were prescribed. The patient performed light household duties, received visitors, and was cheerful in spirits until the latter part of November. From that period she expressed anxiety about her condition, and complained of exhaustion. She went out daily until the early part of December, but was easily fatigued, and spent much of the day reclining upon the lounge. Dyspnœa was complained of on slight exertion, and was noticeable in talking. She also complained of a stuffed feeling in the ears, and nausea, which were relieved by the recumbent position. Her pulse was 120, appetite poor, skin dry, and mouth dry and sticky. A bright, circumscribed spot was generally visible upon one or other cheek, usually the left. On December 9th she was seen at her home, soon after having returned from a ride on the street cars, and was so exhausted that she was directed to remain in bed. Her weight at that time was seven pounds less than in August last.

The amount of urine passed each twenty-four hours and the quantity of sugar contained, as determined by the polariscope, were as follows:

*November 24.* Fifty-two ounces of urine passed; sugar 6 per cent.

*25th.* Eighty-one ounces of urine passed; sugar 5 per cent.

*26th.* Seventy-two ounces of urine passed; sugar 5.6 per cent.

27th. Seventy-seven ounces of urine passed ; sugar 5.75 per cent.

28th. One hundred and one ounces of urine passed ; sugar 4 per cent.

29th. Sixty-five ounces of urine passed ; sugar 4.5 per cent.

30th. Seventy-four ounces of urine passed ; sugar 5 per cent.

December 1. Eighty ounces of urine passed ; sugar 5.5 per cent.

2d. Urine lost.

3d. Eighty ounces of urine passed ; sugar 4.75 per cent.

4th. Seventy-five ounces of urine passed ; sugar 6 per cent.

5th. Seventy-two ounces of urine passed ; sugar 5 per cent.

6th. Ninety-one ounces of urine passed ; sugar 4.5 per cent.

7th. Eighty-four ounces of urine passed ; sugar 6 per cent.

8th. Seventy-six ounces of urine passed ; sugar 4 per cent.

9th. Ninety-two ounces of urine passed ; sugar 3 per cent.

10th. Emaciation and weakness perceptibly increased, and breathing more difficult. 80 ounces of urine passed, containing 3 per cent. of sugar.

11th. Patient passed a miserable night, and her husband, being alarmed about her condition, sent for me at 9 A.M. Pulse rapid and very feeble, breathing short, and speech jerky. The fetal heart-sounds could not be distinguished. Questioning her, she said movements had not been perceptible for several days. Examination disclosed the head presenting, cervix effaced, and os dilated as large as a silver dollar. Labor pains had not been felt. Her condition was so serious that an appointment was made to meet Dr. Busey at 2 o'clock in the afternoon to consider the advisability of emptying the uterus. At 11 o'clock I received an urgent summons to return to the house, and on my arrival found the head of the infant was born. The birth had been painless, and the only sign to attract attention to the fact that labor was progressing was the discharge of liquor amnii about an hour before its termination. The body of the child was delivered and the placenta readily extracted. Uterus contracted well and very little blood was lost. The infant, a male, was small but plump, and well nourished. It had evidently been dead some days, as the epidermis peeled off easily. The mother was very

much prostrated; pulse 150 and feeble, and extremities cold. She was wrapped in blankets, hot applications applied, strophanthus and whiskey given by mouth, and, later, hypodermic injections of whiskey and digitalis. At the suggestion of Dr. Prentiss, who had been summoned in my absence, a hypodermic injection of morphine and atropine was administered.

Patient slept some, felt relief, but still complained of shortness of breath. At 2 o'clock Dr. Busey saw the case in consultation, and continued thereafter to meet and advise with me daily. Stimulants and warm applications continued; two grains and a half of extract of ergot given every four hours, in suppository. Thirst a prominent symptom. 5 P.M. Pulse 120, respirations 24; surface cold. Condition somewhat improved. 10 P.M. Pulse 124, axillary temperature 98.2°. Lochia normal; breathing less labored; urine passed in large quantities. Sleeps most of the time, but when aroused her mind is clearer.

12th. Pulse 124, temperature 99°. Mind clearer, breathing better, less thirst, tongue not so red.

13th. Passed a restless night. Pulse 125 and feeble, temperature normal. General condition bad, expression anxious, lochia normal, abdomen tympanitic. Soap and water enema retained. 4 P.M. Slept all day, awakening only to take nourishment. Pulse 140; less thirst. Seidlitz powder administered. Ergot suppositories stopped. 10 P.M. Pulse 130, mind dull, and sleeps with one eye half opened. Mental condition is that of low typhoid type; abdomen somewhat distended; enema returned. Calomel triturations, one-third of a grain each, ordered every three hours.

14th. 3 A.M. Bowels moved three times, some gas expelled, and abdomen less tympanitic. One-eighth of a grain of morphine given hypodermically to quiet restlessness. 10 A.M. Abdomen tympanitic. Stopped milk, and gave animal broths and scraped raw beef. Digitalis and whiskey continued. Lochia normal; temperature 99.7°. During the day her condition remained about the same; toward night she became weaker and her mind more dull.

15th. 2 A.M. She became so weak, stimulants in small quantities were resorted to every hour. Respirations deep and labored, but not accelerated; sighing; clonic contraction of muscles of



the chest and arms ; eyes retracted. At 10 A.M. she was unconscious, almost pulseless, and, later in the day, died.

FREQUENCY.—Judged by the paucity of literature on the subject, we might infer that diabetes occurring during the childbearing period is an extremely rare complication. We believe, however, that the disease is not so uncommon as it is unrecognized.

It may develop during pregnancy, the latter exercising a causal influence, or pregnancy may occur in a woman already diabetic.

That peculiar condition of a pregnant woman, which is responsible for the development of the disease in one case, is likewise the factor in adding malignancy to a preëxisting mild attack in the other.

In explanation of the presumable infrequency of the occurrence of pregnancy in diabetic women, it is asserted that the disease exercises a direct influence upon the female generative functions. While amenorrhœa has resulted in some instances, in others regular menstruation has been observed to the end of grave cases of diabetes. A diminution of sexual energy has been attributed to the disease. Local affections, inflammatory in character, are common in diabetic women, and may lead to sterility. Matthews Duncan, quoting Greisinger, says that of 53 female patients suffering from diabetes only 2 were affected during pregnancy. Frerichs states in a private letter to the former: "Diabetes seldom occurs in women during pregnancy. Among my own 386 observations of diabetes, 282 were of the male sex and 104 of the female. Of these 104 of the female sex only one was ill during pregnancy, and in the eighth month."

That the complication may occur more often than we are led to suppose, and be overlooked, is evident from the histories of the cases collected by Matthews Duncan. In the first case met with by that observer, the urine was not examined for the presence of sugar until after labor, although well-

marked symptoms of diabetes had been present, and her appearance created the gravest alarm. Exhaustion and laborious respiration were causes of anxiety during confinement. After delivery an enormous quantity of urine was drawn off by catheter, although the bladder had been emptied a few hours before, and again in five hours three pints more were passed spontaneously. There also existed great thirst, but it was not until the day following labor that the urine was examined for sugar and its presence revealed the nature of the malady. Death occurred two days later.

The report of this single case would convey the impression that a failure to make the diagnosis was inexcusable. Further investigation, however, would fail to support the accusation, for in a number of cases the disease was unrecognized, and in some of them during repeated pregnancies, although well-defined symptoms pointed to the probable existence of glycosuria. The previous history of the above case is interesting in this connection. During the second half of this pregnancy, before she came in Dr. Duncan's care, she suffered from thirst and dryness of the mouth, which increased as gestation progressed. The urine was examined and nothing abnormal detected; it is even doubtful that the presence of sugar was suspected or sought. Furthermore, during the end of this patient's first pregnancy she suffered much from thirst and passed an enormous quantity of urine during the first days of the puerperium. From the tendency of the affection to recur in subsequent pregnancies, it is highly probable that diabetes existed at that time.

Other instances among the series of cases collected are worth attention.

Dr. W. L. Reid reports that fifteen months after marriage a lady gave birth to a dead eight months' child. No evidence is given to prove that diabetes was present at that period, but we may assume that such was the case from the premature death of the child and the fact that the disease was detected in the next pregnancy, which occurred only four months later.

The history of the second pregnancy demonstrates so forcibly the case with which the disease may be overlooked, even when pronounced, that a free quotation from Duncan's report is excusable: "Thirst was an early symptom, and, after a little time, diuresis. These symptoms got worse as pregnancy went on, but she did not call special attention to them, supposing that they were incidental to her condition. She also got very thin and was troubled with crops of small boils. A little over the eighth month she felt movement cease, and, three or four days later, labor came on, slow in character, lasting for about twelve hours, the membranes not bursting till the head began to strain the perineum, and the quantity of liquor amnii was very great. Dr. Reid noted at the time that before his hands were washed the fingers became 'sticky.' This occurred to him as being due to the presence of an abnormal quantity of albumin in the fluid, and regarded the case as one of dropsy of the amnion. . . . The child was dead and the epidermis beginning to separate. It was very large and well nourished. The only point worth remark in the puerperium was that a day or two after labor the thirst became 'frightful,' and being refused water by the nurse she crept on her hands and knees to the water-bottle.

"About two months after her confinement, on an incidental visit to her house in the country, he was struck with her thinness, weakness, and the dryness of her skin, *and for the first time* the idea that she might be suffering from diabetes occurred to him. Particular examination showed that such was the case. . . . She was found to be passing twenty-two ounces of sugar in the twenty-four hours."

Subsequent observations showed that the disease was persistent, and Dr. Pavy, to whom a specimen of the urine was submitted for examination, expressed the opinion that diabetes caused the death of the first fetus, as well as the second.

John Williams reports the case of a lady who passed about four pints of urine daily after her confinement. At noon of the second day more than two pints of urine were drawn off

by the catheter, and five hours later the same quantity was passed.

“On the fifth day after confinement the urine was tested *for the first time*, and found to be loaded with sugar.” The elder sister of this patient is married and has been pregnant twice. “Diabetes was discovered *accidentally* after her second confinement.”

John Williams also recites the history of a patient that came to have her perineum repaired, which had been torn in a seventh confinement. A more or less imperfect history of unrecognized diabetes existed in this case, dating back to the first pregnancy, thirteen years before, when “she was very thirsty, often getting up in the night and drinking a ‘quart’ of water.” She became very thin, and the loss of flesh and thirst continued until the confinement. The second pregnancy was very similar; the third, fourth, and fifth not so well marked. The sixth and seventh pregnancies were accompanied with loss of flesh, thirst, and involuntary discharge of urine. Since last confinement her eyesight became defective. The urine was examined and sugar detected four months and a half after the seventh labor. She was placed under treatment, and for several weeks the urine remained loaded with sugar. Afterward it disappeared completely and the perineum was repaired.

Matthews Duncan reports another case where diabetes was discovered in the fifth month of a third pregnancy, and the history clearly points to the fact that the disease had existed unrecognized during the two previous gestations. At the end of her first pregnancy she gave birth to a decomposed male child, and during the puerperium suffered from a successive crop of boils. The second child was also born in a decomposed state. It is specially stated that in both these pregnancies the urine was not examined. During the middle of the third pregnancy the patient was suddenly seized with partial amaurosis of the right eye. This led to an examination of the urine, and the detection of glycosuria.

The evidence presented in these cases is believed to be sufficient to support the statement that diabetes does occur as a complication of childbearing more frequently than we have supposed.

**DIAGNOSIS.**—To aid in recognizing the affection, glycosuria should be suspected and the urine examined for sugar in all cases of pregnancy presenting obscure symptoms, as weakness, emaciation, short breathing, etc. It is a good rule to suspect diabetes whenever a dead child is born without apparent cause. Syphilitic poison is no more certain to destroy foetal life than the diabetic condition.

The subjective symptoms of the affection are of little diagnostic value, because they seldom attract the attention their importance demands. When a woman is suffering from diabetes under other circumstances, she consults a physician about her ill-health; but when occurring during pregnancy the symptoms are made light of, attributed to other causes, or considered incidental to her condition.

Bennewitz reports a case that during the whole of her fourth pregnancy “was tormented with insatiable thirst and profuse discharge of urine; but, as she had no other complaint of sufficient moment to attract her attention, she did not apply for advice, and the nature of the urine was never ascertained, as the quantity of liquid she drank was naturally thought to be a satisfactory explanation of the increased quantity of liquid discharged.” The symptoms disappeared after delivery, but returned at the beginning of her next pregnancy. “Thirst and diuresis came on even in a more tormenting degree than before; no other symptom of ill-health, however, accompanied them, so that it was not until the seventh month that she applied for medical advice, and even then thirst was her chief complaint.”

In my own case the patient did not complain of any symptom that led to a suspicion of diabetes, although the disease had undoubtedly existed a month before she came under observation. The high specific gravity of the urine

caused me to examine it for sugar. Investigation then revealed well-marked symptoms of the disease. When questioned why she had not mentioned these on my previous visits, she replied that the diuresis was attributed to the thirst, and the thirst to the warm weather. The importance of the symptoms in connection with her ill-health was not suspected.

In several of the reported cases trouble of vision led to the detection of glycosuria.

From the evidence that cases have been overlooked, and others discovered accidentally, it is more than likely that diabetes occurring during pregnancy is often unrecognized. Some fatal cases are probably classed among deaths due to unaccountable causes—to shock, embolism, the entrance of air into the veins, etc.

CLINICAL HISTORY.—The clinical history will be studied only through obstetrical spectacles, and such conclusions reached as the small material at hand permits.

Reference has already been made to the effect of diabetes upon the female generative functions. Loss of sexual appetite and power are mentioned as among the first symptoms of the disease. Amenorrhœa usually appears sooner or later, but in some cases regular menstruation persists until the fatal termination of the disease. In several of the cases reported, it is even stated that the menstrual flow recurred regularly during pregnancy. Dysmenorrhœa and excessive flow are also common and dependent generally upon local inflammatory changes. Vulvar eczema, granular erosion of the cervix, and fungous endometritis are frequently met with in diabetic women.

Before taking up for consideration the effect of diabetes upon the pregnant, parturient, and puerperal woman, attention is again called to the influence of the childbearing process upon the disease.

When a predisposition exists to diabetes, pregnancy is liable to act as an exciting cause. It may develop in the beginning

of gestation or be deferred until later, usually about the period of quickening. When preëxisting, the type of the malady is changed for the worse. Thirst, emaciation, and exhaustion become more pronounced, and often progress with frightful rapidity. The disease is less responsive to treatment than under other circumstances. If, however, it does not progress to a fatal termination before confinement, some hope may be entertained that it will undergo a favorable change at the end of pregnancy. Often the improvement is marked, and the disease seems held in abeyance until a succeeding pregnancy or some cause starts it up with renewed activity.

Cases are reported of disappearance of sugar from the urine after labor, and with it of diabetic symptoms. Some remained in good health, while others suffered relapses in a few months, or in subsequent pregnancies.

The aggravation of diabetes by pregnancy sometimes causes the disease to assume an acute form. Diabetes developed during pregnancy, or true diabetes mellitus gravidarum, is liable to run a rapid course. In the case reported by myself, the duration of the disease, from the appearance of the symptoms to the fatal termination, was only ten weeks.

Other cases reported present well-defined attacks of the intermittent type. Authorities contest the existence of an intermittent form of diabetes, and attribute cases reported as such to either the result of malarial poisoning, or to a benign type of the disease in which sugar disappears temporarily and reappears on slight provocation. The case mentioned by Bennewitz, already referred to in this article, is stated to be unique. Other cases are reported, however, that are equally peculiar in this respect. The first patient mentioned by Matthews Duncan died three days after the termination of her fifth pregnancy. The previous history of the case pointed to the probability that diabetes had existed during the first pregnancy, had disappeared soon after labor, and returned in the second half of the fifth pregnancy.

John Williams reports a case of diabetes that was discov-

ered on the fifth day after labor, the urine being "loaded with sugar." On the eighth day it was present in less quantity, and on the tenth had disappeared. In the third month of a succeeding pregnancy the urine again contained sugar. After delivery it was absent sometimes and present at others. Diabetes persisted during a third pregnancy, and the patient died of intercurrent disease about five weeks after labor.

John Williams met with another case that gave a history of having suffered from symptoms of diabetes in the first and second pregnancies, with recovery following each labor. The symptoms did not appear again until the sixth pregnancy; disappeared afterward, and returned during the seventh. The urine remained loaded with sugar for six months after the last confinement, when it entirely disappeared, and she recovered her health.

Matthews Duncan observed another case, in which diabetes began in the middle of the eleventh pregnancy. Sugar, which had existed in the urine in large amount, disappeared five weeks after the child was born, reappeared four months later, and ended fatally in two months.

Davidson reports a case in which diabetes commenced in the middle of a fourth pregnancy, disappeared immediately after premature confinement, returned five weeks afterward, and ended fatally in two months.

An interesting case of intermittent diabetes, which subsequently became persistent, was recently admitted to the Pennsylvania Hospital. The following report of the case is published<sup>1</sup> in the *University Medical Magazine*:

"The itching about the meatus was the first symptom noticed, twenty-one years ago, while she was carrying her first child; after delivery the itching, and the eruption about the genitals which had subsequently shown itself, diminished and finally disappeared

<sup>1</sup> "Case of Diabetes Mellitus dependent upon Pregnancy." F. A. Packard, M.D. Philadelphia, vol. i. p. 229.



until she again became pregnant fifteen years ago. At that time (her second pregnancy) the itching and eruption reappeared, vanishing again after a miscarriage at the second month. Nothing was heard from her distressing symptoms until she became pregnant for the third time, thirteen years ago, when her old symptoms reappeared. Ten years ago she was again pregnant, and again had a return of the itching and eruption, but not miscarrying this time her symptoms did not entirely disappear. Since that time these symptoms have been constant, but have been markedly increased at various times owing to coëxistent pregnancy (her later pregnancies all ending in miscarriages in the early months). She was pregnant for the last time five years ago, and since then the itching has so increased that she is unable to live in comfort. . . . Examination of the urine on admission showed the presence of over ten per cent. of sugar.

“That the itching and eruption were not due to mechanical causes induced by pregnancy is shown by the fact that they were present in her miscarriages during the early months; that they were due to mellituria is rendered almost certain by the exact similarity, according to her account, between her past and present symptoms. The simultaneous appearance of symptoms with her various pregnancies was noticed by the patient herself; other diabetic symptoms (thirst, polyuria, etc.) were only mentioned after questioning.”

The tendency to the development of diabetes existed in this case to the degree that at first the symptoms appeared only during pregnancy. After miscarriage in the fourth pregnancy the symptoms did not entirely disappear, and became aggravated in each succeeding gestation. The histories of these cases confirm the statement that diabetes occurring in the childbearing woman may assume an intermittent form notwithstanding the admitted rarity of that type of the disease under other circumstances.

THE EFFECT OF DIABETES ON PREGNANCY, LABOR, AND THE PUERPERIUM.—In studying this part of the subject, one is immediately impressed with the pernicious influence exerted by the disease over the function of childbearing.

Pregnancy is frequently interrupted by miscarriage or the premature birth of a dead child. The death of the foetus generally occurs about the seventh month, but it may not be expelled for one or two months afterward. Excessive development of the child is mentioned in a number of cases. It is usually macerated and the epidermis easily separates. It is impossible to state the exact proportion of pregnancies that end in miscarriage and premature labor, because of the incomplete information furnished in the reported cases.

Seventeen women who were affected with diabetes at some time of their childbearing period, gave a total number of seventy-nine pregnancies. The result was not mentioned in thirty-seven pregnancies. Of the remaining forty-two pregnancies, only twenty (48 per cent.) terminated naturally. In two of these the children were feeble and died soon afterward. Nine, or 20 per cent., of the pregnancies ended in miscarriage, and thirteen, or 30 per cent., in premature death of the child.

While demonstrating the prejudicial effect of diabetes upon pregnancy, these figures do not represent the exact state of the case. Some of the pregnancies included in the above list occurred in women before they became diabetic; and, on the other hand, it is likely that the result, in most of the thirty-seven cases not mentioned, was normal.

Labor, at term, in a diabetic woman, does not appear to deviate from the normal type, except when influenced by the large size of the child and excessive quantity of liquor amnii. The tardy labors reported, not due to these causes, were attributable to conditions that would produce the same effect under any circumstances (face presentation, contracted pelvis, etc.). Large size of the child and excessive amount of amniotic fluid were noticed too often to be attributed to coincidence. Sugar was detected in the liquor amnii several times, and once its sticky character attracted attention. Examination has also failed to find it.

Complications arising from a distended bladder are liable to occur during labor and the puerperium.

In cases which change for the better after confinement, the thirst, polyuria, etc., improve in a few days. Sugar disappears from the urine, except the small quantity considered physiological, after the first week—sometimes almost immediately. Cases recovering after labor should be carefully watched to prevent a relapse of the disease. The symptoms after labor in severe cases of diabetes, especially when the child is dead, are those of exhaustion and threatened collapse. The pulse is feeble, and varies from 120 to 150 or more. The surface and extremities are cold. The temperature is normal or subnormal, until approach of a fatal termination, when it rises to 100° or 101°. The labored respiration is usually relieved after the birth of the child; it is sometimes sighing; tongue red and dry, thirst acute, flow of urine augmented. Vomiting of dark-green fluid has been observed. The mental condition is generally blunted; patient talks incoherently and is restless. As a rule, death is preceded by coma from a few hours to several days.

PROGNOSIS.—The unfavorable prognosis of diabetes is accentuated by the coexistence of pregnancy. Mild cases assume acute forms and acute cases rapidly progress to a fatal termination. To this general statement exceptions are met, and cases remain mild and extend through repeated gestations. When the disease exists to an extent sufficient to cause the death of the child, the gravest apprehension must be felt for the safety of the mother.

Extracts from the following cases show the great danger under these circumstances:

CASE I. (Matthews Duncan.)—Premature death of fœtus. Labor before term. Death of mother on third day.

CASE II. (W. L. Reid.)—First pregnancy a macerated child. Diabetes early in second pregnancy. Death of fœtus at eighth month. Premature labor and survival, with persistent diabetes.

CASE III. (Newman's.)—First pregnancy and confinement

normal. Diabetes during two succeeding pregnancies. Second pregnancy and confinement natural. Third pregnancy child born dead at sixth or seventh month. Death of mother on third day.

CASE IV. (John Williams.)—Diabetes from early in sixth pregnancy. Premature death of child. Labor at eighth month. Sudden death of mother four months after delivery.

CASE V. (Aubrey Husband.)—Diabetes in third pregnancy. Child born feeble and died after a few hours. Death of mother eight months afterward.

CASE VI. (Matthews Duncan.)—Diabetes began at quickening in eleventh pregnancy. Child large and born dead. Diabetes disappeared one month after labor; returned in five months, and ended fatally in three months.

CASE VII. (Davidson's.)—Diabetes in middle of fourth pregnancy. Child one month premature, feeble, and lived only thirteen hours. Disappearance of diabetes; relapse and death four months later.

CASE VIII. (Matthews Duncan.)—First pregnancy, child died at eighth month. Second pregnancy, child born at term, decomposed. Third pregnancy, diabetes discovered in fifth month. Premature labor induced, child decomposed. Death of mother on second day.

CASE IX. (Seegen's.)—Three pregnancies during diabetes; all ended in miscarriage about middle of pregnancy. Death after third miscarriage.

CASE X. (My own.)—Diabetes in middle of second pregnancy. Child born dead at seventh month. Death of mother five days afterward.

Of these ten mothers, nine died within eight months after labor, and only one survived with persistent diabetes.

One of the mothers gave birth to three dead children, and one had three miscarriages before a fatal termination of the disease.

The birth of a healthy child, at term, in a diabetic woman, indicates that the disease has not reached a critical stage. In

such cases, therefore, a favorable prognosis may be given so far as immediate danger is concerned.

Intercurrent diseases, during pregnancy or puerperium, possess additional gravity. What would be a trifling ailment under different circumstances, may here give reason for great anxiety.

The danger to the child's life has already been stated. Over half of all the pregnancies ended in miscarriage or premature death of the child. In forty-two pregnancies where the result is given, only eighteen (43 per cent.) of the children lived. Two children out of four that came under the observation of Lecorché, developed hydrocephalus.

An important question now comes up for consideration. Should a woman marry who is suffering from diabetes? From the evidence that has preceded, the reply must be in the negative. The disease, under favorable conditions, and under proper medicinal and dietetic treatment, holds out encouragement of a comfortable existence for several years at least. The intervention of pregnancy would remove any favorable conditions that were present and jeopardize the expectancy of a life none too good at best. It is even questionable if marriage be advisable in a woman who has a strong hereditary predisposition to diabetes.

The following cases have bearing on this point:

The father suffered from diabetes. His daughter married, and during her fourth pregnancy the disease appeared. The child was premature and died soon after birth. Mother died in four months. (Davidson.)

Mrs. N., sister died of diabetes. Diabetes detected in her at the fifth month of her third pregnancy; child dead. Mother died on second day after confinement. (Matthews Duncan.)

Mother had been suffering from diabetes four years. Eldest daughter married, and diabetes was discovered accidentally after her second confinement. Second daughter married, and diabetes was found to exist on the fifth day after her first child was born. She died five weeks after her third labor. The third or youngest

daughter had been diabetic four months when she died from an intercurrent attack of enteritis. (John Williams.)

TREATMENT.—The obstetrical treatment of this subject pertains to a consideration of the advisability of inducing premature labor. The question is entirely a new one, and we are not in a position to decide it.

It failed to be of benefit in the only case (Duncan's) in which it has been employed, because it was deferred until too late. In my own case the subject had been considered, and labor would have been induced if it had not come on spontaneously.

Failure would have resulted here also, from procrastination. By deferring action until it seemed demanded, the favorable time, if there were any, slipped by. In explanation, it may be said that during the last few days the changes for the worse took place with alarming rapidity, and the patient passed quickly from a condition of comparative health to one of collapse.

The difficult point to decide is not as to the advisability of inducing premature labor, but as to when it shall be done. In the milder cases of the disease, when there is reason to think that pregnancy will terminate naturally, interference is not justifiable. But when the symptoms are acute, emaciation and exhaustion of the mother threatening the existence of the child, prompt action is demanded in the interest of both. The period at which the child usually succumbs is about the seventh month, therefore labor must be induced at the earliest period of viability.

# A SUCCESSFUL PORRO OPERATION.

## SECOND CLASSIFICATION OF GODSON.

BY R. STANSBURY SUTTON, M.D.,  
*Pittsburg, Pa.*

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Mrs. A., forty-one years of age, married, was admitted to my private hospital on the 21st of May, 1891. She had borne no children, but had not menstruated for five months; did not suspect that she was pregnant; stated that her trouble was an ovarian tumor which, during the last five months, had grown with great rapidity, and that she suffered great pain. She was emaciated, anæmic, and frightened. Without making any examination, she was assigned a room, and the supervising nurse was instructed subsequently to have her ready for operation forty-eight hours later, viz., at 2 P.M., May 23d. At the appointed hour she was chloroformed, and there assembled around the operating-table the following physicians: Dr. James Dickson, Dr. Keck, Dr. Beach, Dr. Sterrett, Dr. Mercur, and my assistant, Dr. Williamson. The abdomen was then exposed, and I saw it for the first time. After a rapid examination, occupying less than a minute, I pronounced the tumor to be a degenerating fibroid, and announced a supra-vaginal hysterectomy to be the proper operation. A twelve-inch incision in the median line exposed the tumor; from its dome the omentum was stripped, some of its bleeding vessels were secured by hæmostatic forceps, all wrapped in a towel, and laid above the wound. No fluctuation could be detected in the tumor; but still believing in my preconceived idea with reference to its degeneration, I drove a trocar through more than an inch of solid wall, and entered a cavity from which flowed eight pounds of dirty, thick, sticky fluid. After withdrawing the trocar, I managed to slip the incision over the dome of the tumor, my assistant lifting the latter

upward and forward until it rested outside of the cavity, completely interfering by its magnitude with any intelligent manipulations behind it. Pushing my hand down behind it into the pelvis, I announced that the uterus was enlarged, and that the fundus was continuous with the tumor.

I managed to work two turns of a bit of rubber tubing around the uterus, to push them low down, and to secure them by a tight knot. I stated that I would cut away the tumor from the uterus at their junction. After packing sponges about the base of the tumor and the uterus, I made the division. The tumor was transferred to a large tin vessel. The cut surface on the fundus of the uterus was at least four inches in diameter, and in the centre for an inch in length the cavity of the uterus was opened, and through the aperture a loop of an umbilical cord pouted. Through this aperture I introduced my index finger, and, with a knife, slit the uterus open down to the constricting rubber tube, delivering a living child at the fifth or sixth month of utero-gestation. Having passed two hysterectomy pins through the uterus low down, I amputated the uterus above the pins, and the uterus, with the placenta still attached and the umbilical cord undivided, with the fœtus, was passed to one side.

The abdomen was washed out, and the operation completed as an ordinary supra-vaginal hysterectomy of the extra-peritoneal variety. The operation had lasted forty minutes.

As already stated, eight pounds of fluid were drawn from the interior of the tumor, four pounds of blood had exuded from its walls into the pan in which it lay, and the tumor thus depleted still weighed ten pounds, making in all twenty-two pounds for the weight of the growth before it was attacked.

The recovery of the woman was uneventful, and she remains in excellent health.

The Porro operation was originally designed as a modification of the Cæsearian section. Its performance, under such circumstances as I have related, is rare, but not novel, in substantiation of which I submit the attached table of reported operations, which table was kindly prepared for me by Dr. Harris, of Philadelphia.



## CASES OF PREMATURE PUERPERAL HYSTERECTOMY.

No.	Date.	Operator.	Age.	Cause of difficulty.	Stage of pregnancy.	Result to woman.	Cause of death in woman.	Reference.
1	Jan. 7, 1877	Dr. Robert Barnes, London.	?	Fibro-myoma of uterus.	2 months	Died.	Shock and peritonitis.	St. George's Hosp. Rep., 1874-75, p. 91.
2	Mar. 2, 1880	Prof. Kaltenbach, Freiburg, Germany.	32	Fibro-myoma of uterus, 6½ lbs.	22 weeks	Recovered.	Recovered.	Centralb. für Gyn., July 17, 1880.
3	Mar. 18, 1880	Prof. Adolph Wasseige, Liège, Belgium.	35	Cystic fibro-myoma of uterus, 9 lbs.	18 weeks	Died.	Peritonitis.	Bull. de l'Acad. roy. de Méd. de Belg., t. xiv. 3e Ser. No. 4.
4	Aug. 16, 1880	Prof. D. Hayes Agnew, Philadelphia.	44	Fibro-myoma of uterus.	6 months	Died.	Vomit'g and exhaustion.	Communicated by operator to R. P. H.
5	July 12, 1882	Mr. J. Knowsley Thornton, London.	38	Fibro-myoma of uterus.	4½ months	Recovered	Recovered.	Communicated to Dr. Godson.
6	July 13, 1882	Dr. Thomas Savage, Rugby, Eng.	25	Fibro-myoma of uterus, 9 lbs.	16 weeks	Recovered.	Recovered.	Brit. Med. Journ., Sept. 2, 1882.
7	Jan. 13, 1883	Prof. Carl Schröder, Berlin.	40	Fibro-myoma of uterus.	3 months	Recovered.	Recovered.	Communicated to Dr. Godson.
8	Sept. 15, 1883	Dr. Thomas Savage, Birmingham.	22	Occlusion of vagina.	6 months	Recovered.	Recovered.	Birmingham Med. Rev., Nov. 1883.
9	Jan. 17, 1884	Dr. George Fortescue, Sydney, N. S. Wales.	21	Ovarian cystoma; uterus punctured.	5 months	Recovered	Recovered.	Australian Med. Gaz., May 15, 1884.
10	June 23, 1884	Prof. Carl Schröder, Berlin.	34	Large fibro-myoma of uterus.	2½ months	Recovered.	Recovered.	Communicated to Dr. Godson.
11	Dec. 28, 1889	Prof. Gustav Braun, Vienna.	33	Malacosteon.	6½ months	Recovered.	Recovered.	Wiener med. Woch., Nov. 8, 1890, p. 1032.
12	May 23, 1891	Dr. R. Stansbury Sutton.	...	Fibro-cystic myoma 22 lbs.	5½ months	Recovered.	Recovered.	Amer. Gyn. Trans., 1891.

Since the receipt of this table, Dr. Ross, of Toronto, Canada, has reported a similar case with a similar result. So far as I know, there have been but three cases in the United States and Canada: the first, by my old and beloved master, Prof. Agnew, of Philadelphia; the second, my own, and the third that of Dr. Ross. Prof. Agnew's case was unsuccessful, the latter two successful. In a letter from Dr. Harris, dated July 16, 1891, he says: "Your case belongs to the second classification of Godson, of which there have been but few cases. The children, not being viable, were all lost. Agnew had the only one in the United States besides your own. See *British Medical Journal* of January 25, 1884. . . . I know, however, of twelve operations, with nine recoveries, and you can find them in the tables of Godson. We have had eighteen full Porro operations in the United States, with eleven deaths and ten living children, and two premature puerperal hysterectomies, with one woman (your own) saved." In the case which I have here related, I lost the child, having made no effort to save it.

PAPERS

PRESENTED TO THE COUNCIL BY THE

CANDIDATES ELECTED TO FELLOWSHIP

IN THE

AMERICAN GYNECOLOGICAL SOCIETY

AT ITS

SIXTEENTH ANNUAL MEETING,

HELD AT

WASHINGTON, D. C., 1891.



FIVE CASES OF FIBROIDS OF THE UTERUS  
UNSUCCESSFULLY TREATED BY  
GALVANISM.

SUBSEQUENT OPERATIONS REVEALED THE CAUSES OF  
FAILURE. WITH ILLUSTRATIONS.

BY FRANKLIN H. MARTIN, M.D.,  
*Chicago.*

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I WAS one of the first in this country to catch the infection which followed the enthusiastic reports which came from Dr. Apostoli's work in Paris, in 1884. No longer did it seem necessary for women suffering with fibroid tumors to submit to bloody operations for their relief. Everything of a benign character possessing the nature of a tumefaction situated in the pelvis could be rendered harmless by the new discovery! Electricity would dissolve; the extent of dissolving could be regulated by mathematical precision; therefore possess yourself of an electrical apparatus, cast from you the obsolete scalpel, and henceforth tread in the track of success and rational conservatism!

Thus, like all great discoveries, it led its followers in their first enthusiasm of admiration to expect far more from it than it really claimed for itself. Hence, in many instances disappointment followed.

Practically, Apostoli's method has proved a great discovery. Theoretically, it seemed to be a greater discovery than it practically has proven. Hence, condemnation from the merely theoretical.

From the reaction following the disappointment of those who always mistake new things as the dawn of the millenium, the Apostoli discovery has made healthy progress. It came, there was a large place for it, and it has become established.

We have discovered, by developing it, that it will not cure all cases of fibroid tumors of the uterus; that there is still room for the scalpel. About seventy-five per cent. of all fibroid tumors of the uterus, however, because of electricity should never be touched with a knife.

As a pioneer in this treatment, I wish to present the history of a few of my early cases in which failure was recorded, and allow them to point, in a small way, their lessons for the guidance of the future. They demonstrate forcibly that electricity should be employed with common sense as well as any other powerful therapeutic or surgical agent.

The first case is that of a large supposed fibroid tumor, which was referred to me for electricity by the late Prof. Byford. It represents a rare type, and one in which a positive diagnosis is seldom made without an exploratory incision. The action of electricity upon them, because of a certain peculiarity, possesses a diagnostic value.

CASE I. *Fibroid tumor of the uterus of large size, of many years' standing; treated by electricity; both intra-uterine and negative puncture, without permanent improvement; and, finally, abdominal hysterectomy discloses a fibro-cystic tumor.*—Miss S., aged thirty-six years, unmarried, noticed tumor three years before consulting me, but had been conscious of increased size of abdomen for several years before that time. Menstruation regular, not excessive but somewhat protracted, at times lasting occasionally ten days. Severe dysmenorrhœa of a spasmodic nature. Complains of constant pain in left side in region of descending colon and sigmoid flexure. Patient about five feet seven inches in height; weight 110 pounds. Tumor produced considerable deformity from its size, extending to two inches above umbilicus. The patient states that the tumor is growing rapidly. The uterine canal is entered with difficulty with an Apostoli intra-uterine platinum electrode to the depth of five inches.

This patient was put upon systematic intra-uterine galvanism according to Apostoli principles. The first peculiarity noticed about the patient was the fact that she could not tolerate any considerable dose. A current of more than 50 to 60 milliamperes would invariably be followed with a very unpleasant reaction in the way of severe pain and nervous excitement. However, as long as the current was not allowed to exceed 50 milliamperes the patient experienced the ordinary general tonic effect of the galvanism. I was soon convinced that the small doses tolerated would accomplish results slowly and advised the negative galvanopuncture (Apostoli method). This was attempted twice, but with such exceedingly unpleasant results in the way of severe shock and extreme prostration, that I determined to abandon the use of the agent—electricity. My results in this case were so much at variance with ordinary cases of apparently the same type, that I was at a great loss to account for them. I advised at this point that the patient return to Dr. Byford for an operation. The patient left me much dissatisfied with the results of my efforts.

Fortunately she did return to my colleague, Prof. Byford, and I had the extreme satisfaction of examining the tumor after it had been removed by the latter surgeon, assisted by Dr. H. T. Byford.

It was of a fibro-cystic nature, about one-half of its contents being removable through a large trochar, as semi-solid fluid of an albuminous character. At the operation it was looked upon as a semi-malignant tumor. Subsequent examination, together with the subsequent history, led to different conclusions.

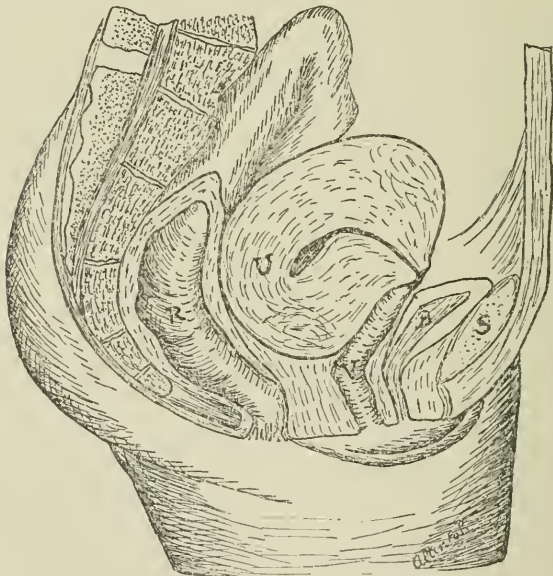
The above case is only one more proving that electricity is not suitable for the treatment of fibroid tumors which in any way partake of a cystic nature. The patient here was extremely sensitive to electricity. There is only one other condition except acute inflammation in which extreme sensitiveness to strong doses in fibroids leads one to suspect the cause—that is, certain forms of hysteria. Hence the diagnostic value of the symptom.

The next variety I have to speak of is represented by two

cases in which the uterine canal was so distorted that intra-uterine treatment was impossible, and galvano-puncture was not accompanied by satisfactory results.

CASE II.—Mrs. X., aged forty-three years, was referred to me for treatment by Dr. Christie, of Pittsburg, Pa., June 1, 1889. The patient had no children, but gave a history of several miscarriages. Menstruation was excessive and very painful at the time she consulted me. Menstruation had been excessive for four years. First noticed an enlargement about four years ago. Bladder symptoms aggravated from pressure, and locomotion is accomplished with difficulty. The tumor was of an interstitial variety, large, filling whole pelvis and extending within two

FIG. 1.



inches of the umbilicus. The cervix was pushed forward and was crowded high up above the symphysis, in such a location that it was impossible to enter the canal with any form of electrode or bougie. (Fig. 1.) The mass of the tumor seemed to



occupy a position behind the neck of the uterus and to throw the organ into a position of retroversion.

This patient was given negative galvano-punctures extending over a period of three months, the intervals between the treatments averaging about seven days. The puncture was advised because of my inability to get an electrode into the uterine canal because of its distorted condition. The patient bore as high as 250 milliamperes at various sittings. The symptoms materially decreased in severity, including the hemorrhage, and the tumor decreased one-third in size during the three months. The patient was so much improved that she returned home very well satisfied with the results. She remained at home for nearly a year in a much improved condition, when she returned because of rapid increase in size of the tumor.

I again continued the former treatment for two months, stating when I began that I should advise an operation for total removal of the tumor, or the Battey-Tait operation, if it were not promptly successful.

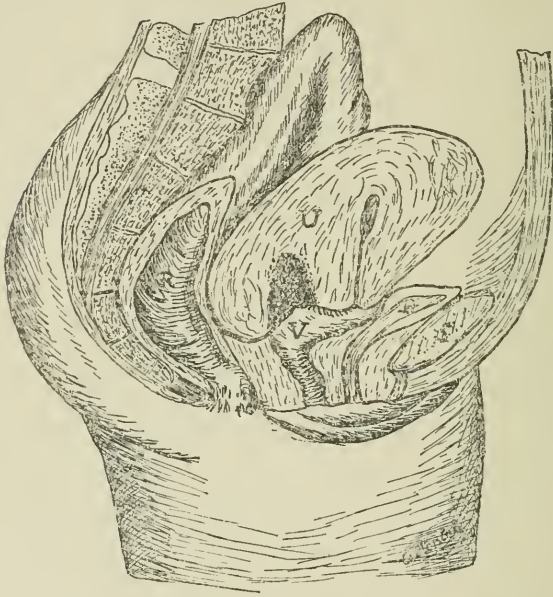
Instead of the tumor decreasing in size it remained practically stationary, notwithstanding vigorous treatment, and the hemorrhage was again becoming troublesome.

In October, 1890, I removed the appendages, the tumor proving to be upon the exploration, as diagnosed previously, a large interstitial fibroid developed in the posterior wall of the uterus. The patient made an uninterrupted recovery, and in the incredibly short time between the operation and her discharge from the hospital, a period of four weeks, the tumor had decreased fully one-half in size.

CASE III.—Miss Y. was referred to me by Dr. M. Caldwell, of Waukesha, Wis., for electrical treatment for a fibroid of the uterus of long standing. The growth was a large intestinal tumor enlarging the whole uterus and producing a deformity simulating a six months' pregnancy. The cervix was crowded well up behind the symphysis, and a large symmetrical mass presented in the Douglas cul-de-sac, indicating a retroverted condition of the uterus. (Fig. 2.) The uterine canal could only be entered with the utmost difficulty, because of the extreme distortion, and then only with a flexible bougie or electrode. The introduction of a

bougie or electrode into the canal produced considerable pain. The symptoms were pain in tumor, dysuria, sacralgia, hemorrhage, and deformity accompanied by general exhaustion.

FIG. 2.



Positive intra-uterine galvanism was instituted and finally rejected because of the extreme difficulty experienced in introducing the electrode and the severe suffering the operation engendered.

Much good was accomplished in relieving the symptoms, however, but the mild currents made necessary by the pain otherwise produced were not of sufficient strength to reduce the tumor perceptibly.

Finally I resorted to negative galvano-punctures. These were applied about every ten days for nearly three months, the current never exceeding 200 milliampères. The symptoms were improved and the tumor perceptibly reduced during this time. The treatment was discontinued, and the patient did nicely for several months, when she came to me and stated that a week

before she had had a chill which had been followed by some fever and some colored discharge from the vagina. An examination disclosed a slight excavation just posterior to the cervix which resembled a bed to a small abscess.

This was soon healed, apparently. Two months later I was summoned to the patient after she had had a profound chill. Several days followed with high temperature, which at one time reached 106.5°. A few days later I succeeded in locating the pus and evacuating it. The abscess had developed in the posterior wall of the tumor and had found an opening through the posterior vaginal wall in the location of the previous vaginal galvano-puncture!

Every effort was made on repeated occasions, with the patient anaesthetized twice, to effectually get to the bottom of this abscess, and to establish efficient drainage. It proceeded to honeycomb, however, and, in spite of the best efforts of the best surgical talent in Chicago, nothing succeeded in checking the process of suppuration.

Consultation with Drs. Bayard Holmer and H. T. Byford finally decided upon hysterectomy as the only feasible method of removing effectually the abscess.

I therefore performed the operation in August, 1891, the patient surviving but twenty-four hours.

A large abscess cavity was found in the posterior walls of the tumor with several ramifications, one of which had emptied into the uterine canal, another through the posterior wall of the tumor lower down, where it was lying in contact with the vaginal wall, and thence through the wall into the vagina as before described.

It was impossible for me to satisfy myself in regard to the source of infection in this case. I am aware that I have friends in the good profession who would have less difficulty than I in settling this point to *their* satisfaction after reading this report. I will say to *such friends* my reasons for hesitating to accept their version is the fact (1) that my galvano-punctures on the patient were accomplished at the patient's residence with perfectly aseptic instruments, after the parts had been

scrupulously prepared with a bichloride douche, the vagina being loosely packed with antiseptic gauze following the operation and perfect rest in bed for twenty-four hours, with a continuation twice daily of antiseptic douches until the next operation. (2) That I have performed the operation hundreds of times before without a single like result. (3) That with an experience of 250 cases of fibroid tumors I had never seen a suppurating one before, proving to my mind that electricity is itself a preventive of suppuration. (4) The experiments of Apostoli demonstrated positively that electricity is a powerful germicide.

The above two cases are only so many out of a score that I have treated by means of the puncture. They represent my only failures with that treatment, and the last case is the only one in which in all my experience with galvanism I have known pus to develop. Clearly, then, the pus was not the result of the galvanism, but rather, if at all from the result of my connection with the case, as a result of some failure in the precaution to keep everything clean.

I am often asked if I am in favor of the galvano-puncture in the treatment of fibroids of the uterus. I will take this occasion to answer that question.

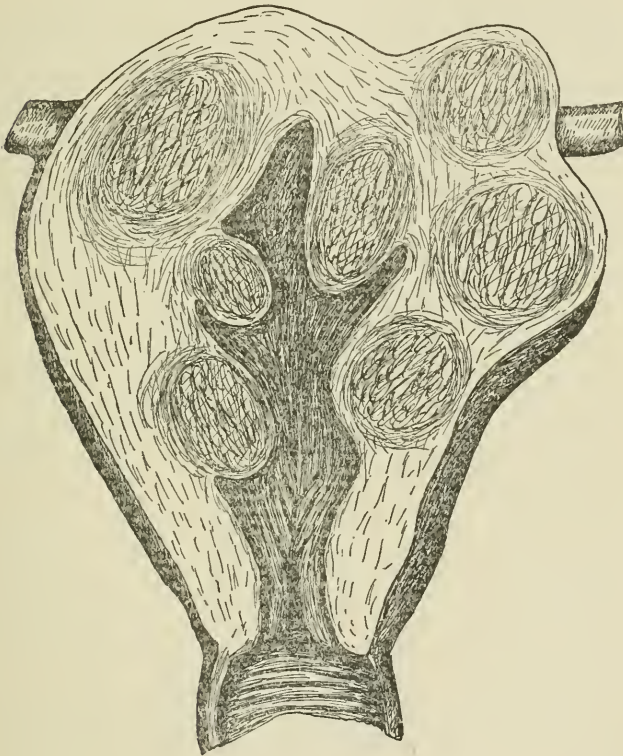
As a matter of choice I am not in favor of the operation. As a matter of necessity, and when proper precautions are obtainable, I do favor the operation.

The following three cases represent a rare form of tumor which, when met with, upsets the calculations of the electrician. They are of a marked hemorrhagic character. They are not of large size. Their canals are patulous, and are easily traversed with the ordinary forms of the intra-uterine electrodes. Upon applying galvanism the patients tolerate sufficient dose to make us confident of speedy results in checking hemorrhage and in accomplishing a cure. With this apparently favorable outlook, the results are dismal failures. Two of the following cases are such, and the subse-

quent removal of the tumors enabled us to solve the mystery :

CASE IV.—In May, 1890, Mrs. Y., aged thirty-six, no children, was referred to me for treatment by electricity by Dr. J. L. Priestman, of Neponset, Ill. The uterus was enlarged to about the size of a three months' pregnant uterus. The canal was patulous, and easily traversed to the depth of three inches

FIG. 3.



with an ordinary bougie the size of a lead-pencil. The subjective symptoms were excessive and prolonged hemorrhage, marked anæmia, loss of flesh, severe backache, irregular uterine pains, and general loss of strength.

I commenced at once the vigorous application of positive intra-uterine galvanism with full doses. The applications were made at intervals of from twenty-four to forty-eight hours. The general tonic effect of the current was the only beneficial effect that I succeeded in obtaining, much to my surprise and chagrin, after a two and one-half months' trial. The hemorrhage, instead of decreasing, increased, and all symptoms remained substantially the same as at the beginning of treatment, with the exception of an improved appetite.

I sent the patient home, with the advise to the family physician that the uterus be removed. The course was urged by me with more than usual vehemence, because from my failure with electricity I was inclined to suspect malignancy.

Accordingly, in August, 1890, at the Woman's Hospital, assisted by Dr. Priestman and the house staff, I removed the uterus *per vaginam*.

The uterus was purely fibroid. There were five distinct nuclei of development representing as many projecting masses on the interior and exterior of the uterine walls, varying in size from the proportions of a hickory-nut to that of a hen's egg. Into the canal were two of these fibroid masses projecting, which served to so distort the canal that a proper cauterization of its interior was impossible. The circumference of the cavity of the uterus had been greatly increased likewise by the projecting masses.

The accompanying cut gives an accurate representation of the uterus—one-half size. (Fig. 3.)

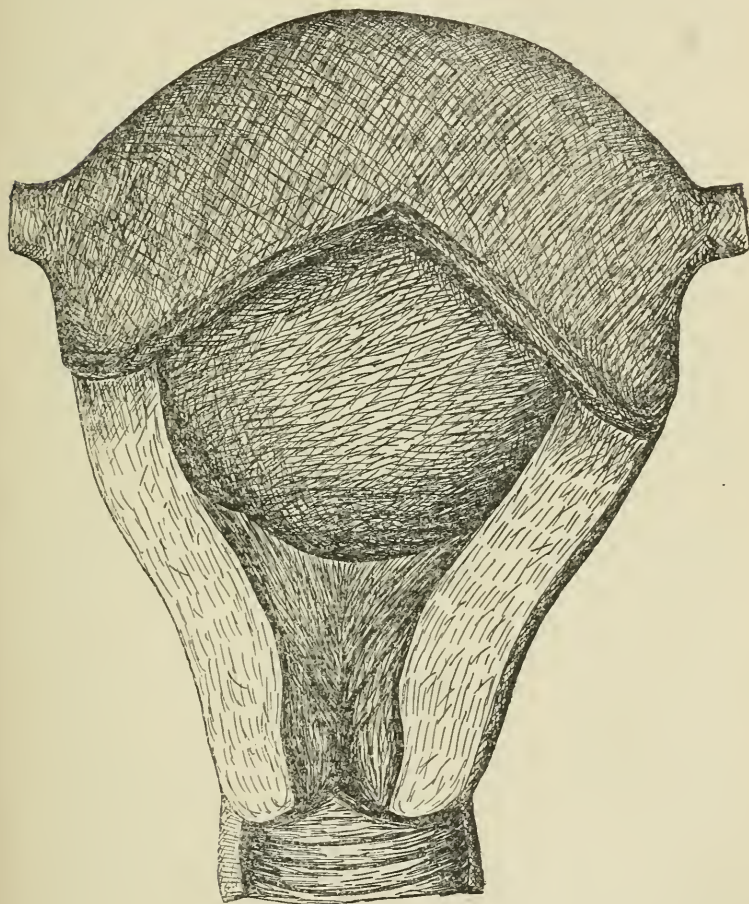
CASE V.—Miss W., aged twenty-eight, was referred to me for the galvanic treatment of a bleeding fibroid by Dr. Van Deuser, of Chicago, in August, 1890. The patient had had several operations for curetting by the late Prof. Byford, and had been thoroughly treated with ergot by Dr. Byford and her family physician.

I found the uterus about the size of a three months' pregnant uterus. The canal was patulous and easily traversed by a probe.

The principal symptom was exhaustive hemorrhages at the menstrual periods, which were frequently continuous throughout the month. As a consequence, anæmia and extreme weakness existed.

The case seemed extremely favorable for the Apostoli intra-uterine treatment. I therefore commenced it with great faith in my ability to establish a cure.

FIG. 4.



There was no cessation of hemorrhage at the end of my first month's treatment, notwithstanding the ability of the patient to tolerate the full dose required. I still continued my efforts, how-

ever, and at the end of the second month the uterus was perceptibly smaller, and the hemorrhagic period was slightly shortened in duration. The amount of hemorrhage in a given time could not be considered less. A third and even a fourth month's treatment was administered. There were no beneficial results obtained further than a diminution in the size of the tumor, and a lengthening of the interval between the hemorrhages.

These results were no more satisfactory to the patient than they were to me, and in May, 1891, my friend, Dr. H. T. Byford, successfully relieved the patient by a hysterectomy.

The tumor represented a uterus about double the normal size, with a very irregular canal and cavity because of submucous projections of separate developments and varying sizes. It could be readily understood why my efforts in checking the hemorrhage had been unsuccessful. The irregularity of the canal and cavity, as accurately depicted in Fig. 4, rendered it impossible to effectually reach the surface of the mucous membrane of the uterus in all its parts, while the small submucous projections in their efforts to free themselves were only irritated still further by the electrodes.

One point of importance in the last two cases, more possibly to my mind than the distortion of the canal, is these multiple nuclei of developments of the growth. I have learned to become suspicious of these cases, where the condition is distinguishable by the irregular external contour of the tumor, and am guarded in consequence in my prognosis. In their constant struggle for existence, a number of these points so interfere with each other that acute symptoms are always present to combat effectually all treatment except that by the knife.

Fig. 5 represents one of these cases; it was accidentally discovered by one of my students in a course of operative surgery in the dead-house.

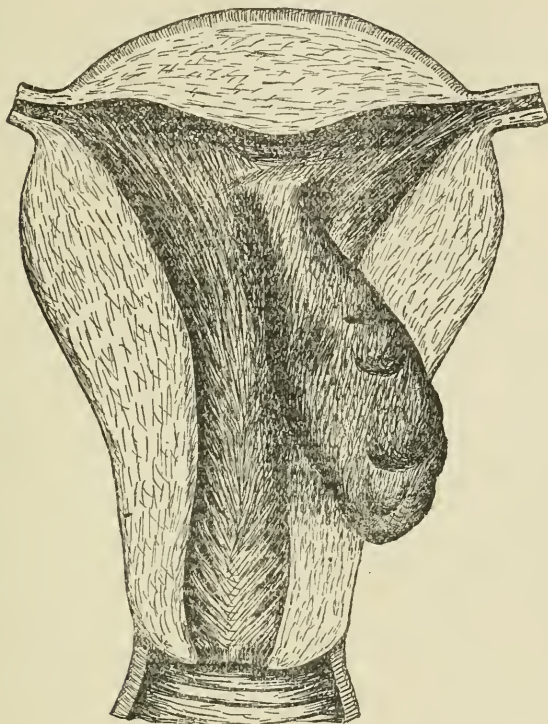
The following conclusions are submitted as summarizing the hints suggested by the foregoing cases:

1. Fibro-cystic tumors are not benefited by electricity.



2. The peculiar sensitiveness of patients with fibro-cystic tumors to electricity makes that fact of diagnostic value in determining that condition.

FIG. 5.



3. The fibroid uterus whose canal is so distorted that it is impenetrable to an intra-uterine electrode must submit to galvano-puncture or the knife.

4. Galvano-puncture should not be resorted to unless the patient can be kept under perfect control, in order to insure absolute cleanliness of procedure and avoidance of subsequent infection.

5. Galvano-puncture will sometimes fail to accomplish a cure in very large hemorrhagic fibroids.

6. Small bleeding fibroids of irregular external contour indicating multiple nuclei of development are liable to do badly, or, at best, not to improve under the Apostoli treatment.

7. A bleeding fibroid uterus, with an expanded and irregular cavity, all parts of the interior of which cannot be reached by some form of intra-uterine electrode, will occasionally fail to yield to the Apostoli treatment.

## ECTOPIC GESTATION.

BY GEORGE M. TUTTLE, M.D.,  
*New York.*

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THIS grave accident, which only quite recently was regarded as a somewhat rare and curious phenomenon, so obscure in its origin and clinical course as to be practically incapable of diagnosis except upon the autopsy-table, has been shown by the light of recent investigations and clinical experiences to be of astonishingly frequent occurrence, as is evidenced in our journals and society proceedings, which fairly teem with reports of these cases. The earnest and careful observations of many operators, based upon a now often rich individual experience, are making clear the exact anatomical conditions which furnish the data for a clear and accepted pathology. With these data has come a flood of light, enabling us to stand forewarned and forearmed in the presence of one of the gravest dangers to which woman is liable; to recognize more frequently its beginning and clinical course, and to cope successfully with its formerly dire results.

I desire in the brief limits of this paper to record simply my own experience in the operative treatment of ectopic pregnancy, as comprised in the twelve cases presented below, believing that in every such reported series there must be some facts of value, whether they tend to oppose or confirm the experiences, views, and deductions of others.

The cases here recorded have all, with the exception of

Nos. X. and XI., occurred in my service at the Roosevelt Hospital during the past three years.

CASE I.—E. K., aged twenty, married at fifteen; menstruation regular, flow free, lasting eight days. One miscarriage at three months, eight months after marriage. No other pregnancy.

Admitted to Roosevelt Hospital November 25, 1887. Menstruated as usual in September (10th to 18th). No menstrual flow in October. About November 1st began to have sharp, shooting abdominal pains. On November 15th a free bloody discharge from the uterus, which has continued ever since. Bowels obstinately constipated. Micturition difficult and painful.

*Examination.* Uterus strongly anteflexed; fundus enlarged and softened; at left of uterus a soft, doughy mass. Cervix patulous and soft. Temperature 99° F. The patient remained three months in the hospital, suffering from severe shooting abdominal pains, obstinate constipation, painful and difficult micturition, and with an irregular, dark, blackish-brown, bloody uterine discharge. Temperature ranged from 99°–101° F. Patient left the hospital on February 16th.

Readmitted on February 23, 1888, and now first came under my care. She was thin, pale, and with facial expression of much suffering. The abdominal pains had continued, and were increasing in severity, as was also the difficulty with micturition and defecation, the latter requiring the constant and persistent use of enemata. I now found the uterus enlarged, anteflexed, and crowded over toward the right side of the pelvis by a large, doughy mass, filling in the left side of the pelvis, bulging into the vaginal fornix, nearly occluding the rectum by a thick annular, constricting ring, and mounting up about two fingers' breadth above the pelvic brim. Cervix soft.

Patient thinks the tumor steadily increasing in size.

*Diagnosis.* Ruptured tubal pregnancy.

*Period of rupture.* About the sixth week.

*Probable date of rupture,* November 1, 1887—*i. e.*, four and one-half months ago.

*Indications for operation.* Failing health and strength; constant and severe abdominal pain; growing difficulty with defecation and micturition, and apparent increase in size of mass.

*Operation*, March 21, 1888. A four-inch incision disclosed a large mass (the size of a child's head) encapsulated on all sides by firm thick layers of lymph and fibrin, and by strong, organized adhesions, lying at left of uterus, and crowding it strongly toward the right. From this friable sac-wall a large mass of old blood-clots, laminated and fleshy, were turned out; the sac separated from adhering gut and omentum, and the left broad ligament ligated along its base in order to get well below the sac.

The right appendages were separated from adhesions binding them to adjacent parts, and, as they were apparently healthy, were left. The recovery was uneventful, union primary, and the patient discharged cured on April 15th.

The specimen removed was examined by Dr. J. S. Thacher. It showed a rupture of the left tube on its inferior surface following tubal pregnancy, chorionic villi being abundant in a shaggy patch on the tube-wall. No embryo was found after most careful examination of all clots. The patient has since remained well, and menstruates regularly.

COMMENTS.—In this case the rupture was undoubtedly extra-peritoneal—*i.e.*, between the layers of the broad ligament, the effused blood stripping up the peritoneum from the pelvic floor and mounting above the pelvic brim. There were no clots in the peritoneal cavity. I supposed that I was dealing with a case of intra-peritoneal rupture, the effused blood having been shut off by a limiting peritonitis, for at that time I, like many others, had not grasped the clear and important facts enunciated in the masterly works of Mr. Tait, who has taught us the vast significance of the direction of rupture, and pointed out the diagnostic clinical features which now enable us to confidently maintain an expectant attitude in the one case, or imperatively summon us to immediate interference in the other. It is probable that the case just narrated would have eventually recovered without operation.

In a rather large number of cases which I have since observed—cases presenting characteristic histories and physical signs of tubal pregnancy, followed by extra-peritoneal rupture,

with blood effusions of large size—it has been my invariable rule not to interfere unless secondary rupture through the peritoneum was suspected. The misery of the patient and the apparently steady increase in the size of the tumor seemed to justify an operation in the case above.

CASE II.—J. P., aged twenty-eight, married. Admitted April 7, 1888.

*Menstruation* began at fifteen, stopped for nine months, then returned, and has since been regular, lasting from one to three days, with a free flow accompanied with slight pain. Married at twenty-four; one miscarriage at the fifth month, five years ago, followed by severe peritonitis and illness of five months' duration.

Two years ago sudden appearance of a thick, purulent, vaginal discharge, followed by vulvar abscesses, which latter have several times recurred.

Menstruated as usual at the end of February; at the end of March—*i.e.*, one week ago—had only a slight show; a day or two later, while lifting a heavy weight, had a sudden sharp pain in the back and abdomen; the flow returned and has continued more or less freely until the present time. Occasional severe, colicky pains in abdomen, and sharp, shooting pains in the left groin. Some nausea. Temperature 99° F. Urine shows a faint trace of albumin.

*Examination.* Breast signs negative. Cervix slightly softened. Uterus a little enlarged and lying anteriorly. A small, elastic mass at the left of the uterus and posteriorly, very tender and fixed. On the right of the uterus a smaller, firm, irregular mass.

*Diagnosis.* Salpingo-oöphoritis, with distention of left tube. Patient refused operation, and soon left the hospital. Re-admitted May 8, 1888. Flow continuous, with constant abdominal pain. Examination reveals unchanged local conditions. On May 13th, chill, with temperature of 104°; May 14th, temperature at evening 104.6°. Severe abdominal pain; no tympanites; color good.

*Operation,* May 15th. No free blood or clots in peritoneal

cavity. Appendages on both sides buried in firm adhesions. Left tube enormously distended throughout its outer half, adhering to ovary, and forming a rounded cyst the size of a large egg. Isthmus of tube of normal size. Right tube and ovary fused in mass; pus escaping from an abscess of the ovary during removal. Irrigation and drainage. Recovery uneventful.

*Examination of specimen.* On opening left tube it was found filled with dark grumous blood, several large dark clots, and a mass of old laminated fleshy clots of whitish color. No embryo found. The normal appearance of the isthmus, with the striking dilatation of the free portion of the tube, together with the curious appearance of the contents of the latter, led to a subsequent careful examination of the clots, with the detection of numerous chorionic villi. The microscopical examination was made by Dr. J. S. Thacher.

COMMENTS.—The presence of a mass on both sides of the uterus, and the failure to observe any change in the size of the distended left tube—a stationary condition probably attributable to the early death of the embryo—together with the chills, high fever, etc., made the diagnosis of the true condition a difficult one; even after operation the case would have passed for a hæmato-salpinx had not the anatomical condition cited above prompted a careful microscopical examination of the clots. I may here say that I am firmly convinced of the truth of Bland Sutton's view that a careful examination of the débris in all cases of so-called hæmato-salpinx will show that a large number of them are old tubal pregnancies. As in the blighted ovum *in utero*, the embryo rapidly disintegrates and disappears while the chorionic villi remain as indisputable proof of the real nature of these cases.

CASE III.—N. J., aged twenty-seven, married. Admitted June 30, 1888. No history of syphilis. Menstruation began at fourteen, at first irregular—every two weeks; flow profuse and painful. Married at twenty-two; had a miscarriage two months later; ten months after this gave birth to a child at term; two years and three months ago another miscarriage at the fourth month.

Menstruated as usual March 25th. Then did not "see anything" and felt in unusually good health until May 10th, then noticed a little "splash" of blood followed by considerable pain in the iliac regions. Felt fairly well until May 24th, then had a sudden pain followed by discharge of a substance like a piece of white flesh with many small blood-clots.

Discharge of blood and clots has since continued with frequent attacks of nausea and vomiting, and with severe cramp-like pains in lower abdomen radiating down thighs. Has noticed increase in size of abdomen, with tenderness, and that the breasts have become large and hard. Temperature 99.6° F. Urine shows trace of albumin.

*Examination under chloroform.* Uterus enlarged; in anterior position; pushed toward left by a mass lying at its right and somewhat posteriorly; mobility diminished. This mass is about the size of two fists, bulges into Douglas's sac and postero-lateral fornices of vagina, and partly occludes the rectum. Cervix soft and velvety. Uterine probe passes three and a half inches; no bleeding. July 7th, mass at right of uterus is smaller and the uterus more movable. Pains are less. July 13th, pains much more severe and mass seems distinctly larger.

*Diagnosis.* Tubal pregnancy, with rupture.

*Duration of pregnancy.* About three and a half months.

*Date of rupture.* About eighth week.

*Direction of rupture.* Extra-peritoneal.

*Date of "secondary rupture."* Uncertain—seems very recent.

*Operation,* July 18th. Three-inch incision shows several large clots in peritoneal cavity. At right of uterus a mass, size of two closed fists, enclosed by thick adhesions. On separating these adhesions the mass was found to consist of the right tube distended by blood-clots, partly organized and with fluid blood at centre of mass. To remove the mass it was necessary to ligate the broad ligament along its base by a series of ligatures extending from the infundibulo-pelvic ligament to the horn of the uterus. The left ovary and tube were found fixed by adhesions which were torn up, and as the ovary was seen to be much enlarged by multiple hæmatomata, it was, with its tube, removed. Irrigation and drainage. Recovery uncomplicated. Union primary.



*Examination of specimen.* About one inch from the cut end of the right tube was a small irregular rent with jagged edges. This rent could not be traced into the broad ligament, but between the layers of the latter was a large irregular cavity filled with old clots. No embryo was found, but numerous chorionic villi in the neighborhood of the rent in the tube-wall.

COMMENTS.—The first rupture took place about two months after impregnation—*i. e.*, on May 24th. The effusion was undoubtedly extra-peritoneal and accompanied with destruction of the embryo. Notwithstanding this there was at some later period a secondary rupture with the escape of some blood into the peritoneal cavity, where it was found on opening the latter. The leakage must have been slight and gradual, and was followed by peritonitis as evidenced by the numerous recent adhesions all about the ruptured sac.

CASE IV.—M. S., aged twenty-six; married. Admitted January 4, 1888. Menstruation began at fifteen; regular and painless; flow three days and moderate. Married at twenty; two children, ages five and three respectively. No miscarriages. Leucorrhœa continuous and excessive for past year. Last menstruation December 20, 1887. Since birth of last child has had constant backache and bearing-down pelvic pain and pain in rectum.

*Examination.* At right of uterus and posteriorly a small mass the size of an egg, fluctuating and tender, but somewhat movable; thought to be a hydro- or pyo-salpinx or cystic ovary. Patient left the hospital on January 28, 1888, "improved." Continued to suffer with constant bearing-down pains and severe pains in iliac and hypogastric regions. A week after leaving the hospital there was a sharp metrostaxis lasting ten days; many large clots were expelled with severe cramps, nausea, vomiting, and faintness followed by loss of consciousness. This recurred in July, with clonic spasms during periods of unconsciousness. Patient had many such attacks. September 29th began to flow again, and since that time there has been a constant bloody discharge with almost constant abdominal pain,

nausea, and vomiting; loss of appetite, flesh, and strength. Bowels constipated. Micturition difficult.

*Readmitted* November 5, 1888. Urine normal.

*Examination* under chloroform. Uterus slightly enlarged, lies anteriorly and deviates toward left; cervix lacerated and hypertrophied, but soft. Right ovary enlarged, prolapsed, and fixed. Right tube enlarged; fluctuates and is fixed by adhesions. Left appendages tender and firmly adherent.

*Diagnosis.* Pyosalpinx, probably double.

*Operation*, November 15th. Incision three inches. Great omentum stretched over abdominal contents, passing over uterus like a curtain and generally adherent. Separated and ligated. Left tube and ovary freed from firm adhesions and removed, (tube glued to ovary which contained a small abscess; tube distended moderately by pus). Right tube and ovary liberated with difficulty. Tube as large as closed hand and very thin; brought out intact. Irrigation and drainage. Uneventful recovery; primary union. Discharged cured December 5th, three weeks later.

*Specimen removed.* Right tube was distended to size of closed hand, the dilatation being chiefly at the ampulla, where the fimbriæ were adherent to a very large and cystic ovary. Contents of tube partly fluid, partly solid, and in its widest part could be felt floating a small hard body about the size and shape of a kidney-bean. On opening the tube this little body was found to be attached by a small filament to the wall of the tube, and proved to be an embryo. Chorionic villi abundant at site of attachment of embryo. The walls of the tube in places were almost the thinness of tissue-paper and seemed on the point of rupture.

COMMENTS.—In this case we have a pretty clear history of death of the embryo followed by months of illness, during which the symptoms increased in severity and the extra-uterine foetal sac did not diminish, but on the contrary, to judge from its appearance, was distending and on the point of rupture. It is to be observed, however, that the coexisting pyosalpinx and abscess of the ovary probably gave rise to many

of the severe symptoms and made detection of the real nature of the case very difficult.

CASE V.—A. P., aged thirty-two, married. I first saw this patient at her home on April 1, 1889, in consultation with Dr. C. N. Thompson. She had been married twelve years; had borne three children, the last one six years ago. No miscarriages. Was well and sound up to two months ago, when she skipped her regular monthly period, and this was followed at once by severe pain in the right iliac region, of agonizing cramp-like character, radiating down right thigh and causing cramps and twitchings in the right leg. This was succeeded by frequent and severe nausea and vomiting with terrible pain on defecation and micturition. Two weeks ago the patient noticed a swelling or hard mass in the right iliac region, and since that time she has had constant metrostaxis, fever, sweating, and headache. There has been constant throbbing in the region of the mass. Dr. Thompson had observed, during the forty-eight hours preceding my visit, that the upper level of the tumor had risen from a point two fingers' breadth above Poupart's ligament to a point three fingers' breadth above the level of the umbilicus. No movement of the bowels could be effected and the urine was passed with great difficulty and pain. She was at once removed in the ambulance to my ward at the Roosevelt Hospital. She was profoundly anæmic and exsanguinated; general condition very poor. Temperature 102° F. Pulse 120 and very feeble. Urine: trace of albumin.

*Examination.* A tumor of large size occupied the hypogastric, right inguinal, and lumbar regions, rising to about three fingers' breadth above the umbilical line. Another and smaller mass occupied the left inguinal fossa, there being a clear space between the two masses. Both masses of smooth contour, and tense, doughy consistency, very painful to touch.

Vaginal examination showed the pelvis filled on all sides with a tense mass bulging deeply down into and nearly occluding both vagina and rectum. Uterine body could not be defined. Cervix large, soft, and patulous; discharge bloody and dark. Breasts contain milk.

*Diagnosis.* Ruptured tubal pregnancy.

*Indication for operation.* Evidence of continuing internal hemorrhage.

*Operation.* Incision five inches, followed by escape of a quantity of bright blood with some large, soft, dark clots. Large mass disclosed, of size described, with *smooth, bluish-black surface*. Mass surrounded and overlaid by colon and meso-colon and covered in everywhere by thick greenish-yellow layers of organized lymph. It was impossible to break up the dense adhesions uniting the sac to the intestines and surrounding parts, so the sac was laid open, the hand introduced, and several pounds of clots turned out, together with several large masses of organized tissue, one—the placenta with membranes—being as large as an orange. An alarming hemorrhage followed, controlled by large clamp-forceps and sponge-packing. The mass in the left iliac fossa was found to be a large collection of soft blood-clots, lying in front of the broad ligament, and which had evidently escaped from the larger mass. The removal of these masses left large dead spaces, with the intestines, matted by adhesions, as their boundaries. These sacs and the peritoneal cavity were flushed with hot water and the sacs packed loosely with iodoform gauze, stuffing in as much as would fill an ordinary hat and bringing the ends out through the lower angle of the abdominal wound—which was left open for one and a half or two inches—together with the handles of the four large clamp-forceps. No drainage of peritoneal cavity. Time of operation, twenty-nine minutes. When removed from the table the patient's condition was very poor and the pulse could scarcely be counted, but good reaction soon took place under energetic stimulation. The clamps were removed in twelve hours, and the gauze gradually withdrawn during the next two days. Recovery was wholly uneventful, and in two weeks the patient was about the ward and a week later went home.

*Specimen removed.* Chiefly clots; small mass of placental tissue with well-marked cotyledons and membranes. No embryo was found.

COMMENTS.—In this case we again have an instance of rupture occurring at the end of two months, the direction of rupture being extra-peritoneal, and the embryo perishing.

Later we have a continuance of the hemorrhage, the large effusion stripping up the peritoneum from the pelvic floor, uterus, lateral and posterior pelvic walls, dissecting up behind meso-colon and mounting high in the abdomen, well above the umbilicus, but still *always outside the peritoneum*. When the tumor was exposed at the operation it was invested, as described, with this smooth, shining peritoneum. Then came secondary rupture, the peritoneum giving way and the blood slowly leaking into the peritoneal cavity, where it was found free. With this gradual leakage there was an extensive peritonitis—an effort to shut off the effused blood—and this I have observed in several other cases, though its occurrence is strenuously denied by many.

CASE VI.—H. S., aged twenty-nine, widow. Admitted June 15, 1889. Began to menstruate at seventeen; three-weekly type, lasting three days and moderate in quantity. One child, six years ago. No miscarriages. Menstruated as usual seven weeks ago; no flow three weeks later—*i. e.*, at usual time. One week later, flow began; at first slight and irregular, but soon profuse and constant and accompanied by severe darting pains in the right groin and dull backache. Has had chilly sensations, sweating, loss of appetite, and some nausea. Temperature 100.5° F.

*Examination*, under chloroform. Uterus slightly enlarged, in anterior position, and with impaired mobility. On either side of the uterus is a small fixed and very sensitive mass with irregular contours. The mass on the right is partly hard and partly soft and fluctuating. This soft elastic portion is elongated and merges into the outlines of the uterus at its right border.

*Diagnosis*. Tubal gestation is suggested, but the case is regarded as one of salpingo-oöphoritis with distended right tube.

*Operation*, June 21st. Left tube and ovary rolled under broad ligament and firmly adherent to its posterior surface, the side of uterus, and floor of pelvis; freed and removed.

Right ovary and tube firmly adherent and could not be brought into wound. Tube distended to size of small sausage. It was necessary to tie off the broad ligament at its base by a series of

ligatures in order to release the appendages on this side, as the tube seemed to merge into the broad ligament. Tube ruptured and some of contents escaped. Irrigation and drainage. On second day temperature rose to 102°, pulse to 128, but both fell to normal on the following day, and recovery was thereafter uneventful.

*Specimen removed.* Left tube greatly thickened and adherent to an enlarged ovary containing a small abscess with foul-smelling pus. Tube contains about one drachm of pus. Right tube enlarged in its outer half; isthmus of tube of normal size. Tube fused with a cystic ovary; fimbriæ effaced. Contents of tube grumous, dark blood and débris, with a small, round, hard, fleshy mass the size of a walnut lying loosely among the clots. On cutting this open a small cavity, with pale-gray shining walls and a little clear contained fluid, was found. No embryo.

*Microscopical examination* shows numerous chorionic villi.

COMMENTS.—In this case the coexisting severe and extensive inflammatory changes in the appendages made an exact diagnosis impossible. The embryo had perished without rupture of the tube, and would possibly have caused no further trouble.

CASE VII.—M. H., aged thirty-four, married. Admitted October 9, 1889. Menstruation began at sixteen; four-weekly type; regular and normal until present illness. Married at sixteen; two children; last child thirteen years ago. No miscarriages. Husband had gonorrhœa last January, and she had intercourse with him once at that time, but noticed no vaginal discharge or dysuria until the past summer. Has not lived with her husband since last January. Admits other sexual intercourse in July last.

*Present illness.* Has never been well since birth of last child, thirteen years ago. Has had more or less constant pain in right iliac region. Three attacks of pelvic peritonitis, the last about four years ago, each attack confining her to bed for about two months. Pains in right groin have grown more severe, and she has had marked dysmenorrhœa. Menstruation has become irregular, the flow being absent at times for two months. Last

menstruation at the end of July. Had a slight menstrual "show" last week, with very severe pain. Four days ago began to have colicky pains in hypogastric region, and these have continued. Defecation and micturition difficult and painful. No chills. Temperature 98.6°; pulse 100 on admission.

*Examination.* Uterus slightly enlarged, anteflexed, and crowded forward and toward the right by a soft, doughy mass which is bulging down into the postero-lateral vaginal fornices. Cervix soft and patulous.

Upper limits of mass cannot be defined, as abdomen is distended and excessively sensitive to touch. No annular constriction of rectum. Breast signs negative.

Patient is very white, and looks very ill. Pulse not rapid, but very feeble, soft, and compressible. Urine contains some albumin, and a few pus- and blood-cells; no casts. Patient's condition does not warrant an examination under an anæsthetic.

October 16th, patient looks very ill, and is evidently loosing ground. Abdomen tympanitic and very tender. Pulse very soft and feeble.

*Diagnosis.* Slow, internal hemorrhage, probably from ruptured tubal pregnancy.

*Operation.* On exposing the peritoneum, it bulged forward into wound, appearing of a blue-black color from the blood distending it. Peritoneum nicked, and at once a vast amount of dark fluid blood, with many clots and much débris, escaped. Bleeding-point sought at once, without stopping to clear peritoneal cavity. The left tube was brought into view, and seen to be the seat of former great distention, with a large jagged tear on its posterior surface and in the outer third. Tube and ovary tied off. A broken-down sac-like cavity, containing old blood-clots and débris, was seen at the left of the uterus, and just behind the broad ligament. This was scraped out and cleansed. Right appendages healthy.

Irrigation and drainage. Time of operation, thirty minutes. Patient's condition very poor; pulse scarcely perceptible; did not rally, and in twenty hours died.

*Specimen.* Isthmus of tube normal. Outer portion greatly

distended, and walls very thin, especially near site of rupture. Rent in posterior wall of tube admits index finger. Edges jagged. Ostium tubæ closed, and some fimbriæ glued to ovary. No embryo was found, though all clots removed were carefully searched. Numerous chorionic villi were found in tissue of tube wall, near site of the rent.

COMMENTS.—From the history, we may assume that the rupture occurred about eight days prior to admission to the hospital; that the escape of blood was at first slight, followed by a sharper flow four days later, and by a subsequent continuous, but gradual leaking. Valuable time was lost in determining the nature of the case; and when the operation was done, too much blood had already escaped—the patient's vitality was exhausted. Several of my cases, as will be seen, show plainly that this slow pouring out of the blood into the peritoneal cavity may go on for a week or ten days, or even longer, and yet give but very slight evidences.

CASE VIII.—M. W., aged thirty-three, married. Admitted June 4th, 1890.

Previous health good. No specific history. Menstruation began at sixteen; regular, of four-weekly type, lasting two days; flow slight, always some pain. Married eight years; two children; two miscarriages. Last February, after having skipped two periods, patient was very ill with chills, fever, and severe abdominal pains. Began to flow, and passed many large clots, with severe cramp-like, expulsive pains. Was in bed for two months suffering constant abdominal pain, and flowing irregularly, but at times very profusely. Metrostaxis and pains have continued ever since. Pain has become a steady, dull ache. Temperature 100° F. on admission.

*Examination.* Uterus anteverted, crowded forward and twisted somewhat toward the right by a soft, doughy, rounded mass closely merging into uterus, filling up the corresponding side of the small pelvis, and rising an inch or more above the brim. Cervix lacerated bilaterally, soft and patulous.



On *left side* the appendages are fused in a mass, prolapsed, fixed, and very sensitive. Breast signs negative.

*Diagnosis.* Salpingo-oöphoritis, with right tube distended by pus.

*Operation.* Four-inch incision. Mass on right side very adherent to omentum, intestines, and broad ligament. Freed with difficulty, and brought into wound. Mass proves to be an enormously distended tube, with a small and apparently normal ovary. Left ovary and tube similarly adherent, and with much difficulty removed. During the removal pus escaped from the ruptured tube. Irrigation and drainage. Recovery uneventful.

*Specimen removed.* Left tube contains considerable pus, has thick walls, and adheres to its ovary, the fimbriæ being obliterated.

*Right tube.* Isthmus of tube of nearly normal size; outer half of tube greatly dilated, and with thin walls. Contents: dark, grumous blood, a little pus, and many large clots, some whitish and organized. No embryo. Examination under the microscope reveals numerous chorionic villi.

COMMENTS.—Again we have the association of tubal gestation with pyosalpinx, the latter condition apparently having followed soon after the death of the embryo, as the patient was in good health until the occurrence of the ectopic pregnancy. The association of the conditions precluded the possibility of an exact diagnosis.

CASE IX.—C. C. C., aged thirty-two, married. Admitted October 13, 1890.

I first saw this patient on October 13th at her home in West Thirty-eighth street, in consultation with Dr. Quintard. The patient was in a condition of profound shock, and the history obtainable a very meagre one. She had recently been married for the second time; had had a number of intentional abortions and repeated attacks of severe pelvic inflammation. Menstruated regularly up to two and one-half months ago. Skipped two periods, was troubled with morning nausea, and noticed

enlargement of breasts. Ten or twelve days ago had a slight flow of blood from the uterus, lasting about fifteen minutes, and almost immediately after this suffered sharp, agonizing, pelvic pain, with sudden pallor and faintness. The metrostaxis ceased, and *has not recurred*, but severe abdominal pain has been constant, with a gradually increasing tympanitic distention of the abdomen. Nausea constant—with frequent attacks of vomiting greenish fluid. Temperature has ranged from 100° to 103° F. Pulse from 120 to 160, and very feeble. No other data could be elicited, except that the patient has had during the past ten days three further attacks of excruciating abdominal pain, followed by faintness, and was each time thought to be dying. The first of these was four days after the slight metrostaxis, and the third attack occurred only two hours before I first saw her. I found the patient in a condition of profound collapse, and almost exsanguinated; skin deathly white, cold, and clammy with perspiration; eyes dull and listless; can with difficulty be roused; pulse running, soft, and cannot be counted; abdomen protuberant and typanitic, except at the sides, where the percussion note is dull. Examination by the vagina shows fixity of the uterus, and a full, “puffy” feeling throughout the vaginal vault, but no mass can be defined.

*Diagnosis.* Ruptured ectopic pregnancy.

*Direction of rupture.* Intra-peritoneal, with continuing or recurring hemorrhage.

The patient was in a room on the top floor of a tenement-house, where it was impossible without much delay to operate; and, though the hope seemed a forlorn one, I deemed it best to take the risk of transport in the ambulance to Roosevelt Hospital. This was done at once and with all possible care, stimulation being energetically kept up, and with the result that she seemed no worse upon her arrival at the hospital, where all was in readiness for the operation.

*Operation.* The patient was almost unconscious, the pulse imperceptible, and but very little ether was administered. Assisted by Dr. H. C. Coe, I opened the abdomen by a free incision, an enormous quantity of fluid and clotted blood escaping from the peritoneal cavity, together with a fetus about three inches in length. The left tube, the site of a large jagged rent, was with

its ovary quickly tied off and the peritoneal cavity cleansed. At the beginning of the anæsthesia the pulse slightly improved, but on opening the abdomen rapidly failed and became imperceptible, while the respiration was short and gasping. In spite of stimulation and infusion the pulse and respiration failed and the patient died before the completion of the operation. Time of operation, fifteen minutes.

EXAMINATION OF SPECIMEN AND COMMENTS.—The abdomen was immediately reopened and the pelvis examined. An irregular opening in the posterior layer of the broad ligament leading into a small irregular intra-ligamentous cavity containing blood-clots and débris seemed to prove that the first rupture, which occurred ten days before, was extra-peritoneal; that four days later the blood broke through the broad ligament and escaped into the peritoneal cavity; that this secondary hemorrhage was not steady but recurrent, as shown by the repeated attacks of great pain, pallor and fainting, and by the prolongation of life over so long a period. Ten days of valuable time were lost through a failure to recognize the condition, and when the operation was undertaken it was well-nigh hopeless.

CASE X.—Mrs. B., aged thirty-six, married, Brooklyn, N. Y. Has had four children, last child two years ago. No miscarriages. Has always been sound, strong, and well. Menstruation regular, moderate, and painless. Last menstruation three months ago; skipped two periods, but had no nausea or other symptoms and did not think she was pregnant. Three weeks ago—*i. e.*, nine weeks after the last appearance of the menstrual flow, and one week after the regular time, in the night and while asleep the patient was suddenly seized with a sharp, tearing, agonizing pain in the lower abdomen on the right side—a pain causing her to cry aloud. A physician was summoned and administered morphine in full doses, quieting but not wholly subduing the pain. There was great pallor and faintness and her husband thought she was dying. Nausea and vomiting were severe, and a somewhat irregular but profuse metrostaxis followed, with the expulsion of large clots and pieces looking like

"flesh." No examination of these clots was made. From this time until I saw the patient she had suffered from constant and severe abdominal pains, often cramp-like, with increasing distention and great tenderness. The bowels were moved with much difficulty, and micturition was difficult and painful. Fever was continuous, with occasional chills and sweating and a rapid loss of flesh and strength. A diagnosis of "ovarian neuralgia" had been made, but there had been no local examination, no measurement of temperature, analysis of urine, or record of symptoms, and the treatment has been confined to the administration of morphine. Her physician, a homœopathist, was dismissed at this time. At my visit on February 21st, I found the patient very white, emaciated, and greatly prostrated. Temperature in mouth, 103.2° F. Pulse 130, very soft and compressible. Abdomen much distended and resonant, except in right iliac region, where for a hand's breadth above Poupart's ligament there was flatness. On vaginal examination the uterus was found enlarged, pushed forward and toward the left by a large doughy mass filling the right of the small pelvis, passing around and behind the uterus, pressing upon the rectum, and mounting above the brim on the right side as noted above. At the left of the uterus there was a soft, elastic resistance, but no definable mass.

*Urine.* Trace of albumin; no casts.

*Diagnosis.* Ruptured tubal pregnancy, with secondary abscess.

*Direction of rupture.* Extra-peritoneal.

*Date of rupture.* Ninth week.

*Indication for operation.* Pelvic abscess.

*Operation,* February 22d, at patient's house in Brooklyn, assisted by Drs. Locke, Jarman, and Southworth. After free incision and on nicking the peritoneum a large quantity of dark fluid and clotted blood escaped. Below and at the right an irregularly rounded mass the size of a cocoanut was seen, covered with a smooth, grayish, shining membrane and surrounded by coils of gut and omentum, loosely adhering by masses of partly organized, yellowish, butter-like lymph and fibrin. On separating the sac it was found to consist of the enlarged right tube and

ovary with the right broad ligament, the latter raised up and spread out over a large mass of contained old blood-clots and débris. The structures were all very friable and rotten and broke under manipulation, letting out a quantity of very foul-smelling clots and grumous purulent material. The broad ligament was rapidly, but with difficulty, tied off in sections along its base and at the border of the uterus. The left tube and ovary were found adherent and both enlarged by contained abscesses. All adhesions were broken up and quantities of the yellow lymph and fibrin removed; the peritoneal cavity was thoroughly flushed and a drainage-tube introduced. Time of operation, twenty-nine minutes.

Though the patient's condition seemed desperate, she made an easy recovery, temperature and pulse soon falling to normal. Her convalescence was uneventful, except that there was a superficial separation of the skin wound for about two inches at the lower angle about the drainage-tube. She has since remained in perfect health.

*Examination of specimen.* The right tube, widely dilated in its outer half, was attached to a large ovary containing an abscess with fetid contents. Isthmus of tube of nearly normal size. In the inferior wall of the tube is a large opening with jagged edges, but the tissues were too rotten to trace the path of rupture into the broad ligament. No embryo was found, but in the clots was a large mass of placental tissue with cotyledons well-defined and with attached but broken membranes and cord.

COMMENTS.—The rupture of the tube, which occurred about the ninth week, was followed by the escape of blood into the tissues outside of the peritoneum and probably by the death of the embryo, and was accompanied with alarming symptoms very suggestive of intra-peritoneal hemorrhage. As free and clotted blood was found in the peritoneal cavity there must have been secondary rupture, but, it is difficult to determine when this took place. It must have been a very gradual leakage, and there was extensive peritonitis following it.

CASE XI.—Mrs. P., aged thirty-two; married thirteen years; never pregnant. Menstruation began at fourteen; perfectly reg-

ular every twenty-eight days; moderate in quantity and duration, with severe dysmenorrhœa. Health good, and is troubled only by chronic constipation, with frequent attacks of flatulent colic. Last regular menstruation was about December 20, 1890. On January 18th had a severe attack of "colic," and this was followed on the 20th by severe dysmenorrhœal pains, menstruation being then due. No blood appeared except one very slight stain. Pains continued for some days, though less severe than usual, and finally passed off. On February 15th, another severe attack of "colic;" worse upon the 17th, when menstruation was again due but failed to appear. Patient felt as if about to be unwell, and on the 19th consulted her physician, Dr. Murtland, complaining of nausea, want of appetite, constipation, pains in abdomen, some difficulty in urination, and the delayed appearance of menstruation. The uterus was found to be enlarged, anteflexed, and movable; no fulness or tenderness posteriorly or laterally was recognized. Pregnancy with tendency to abortion was suggested, and apparently confirmed by an examination of the breasts and vaginal mucous membrane, and the patient was directed to go to bed. At 11 A.M. of same day another severe attack of colic, for which an injection of morphine was given, followed by severe vomiting throughout the next day. Repeated attacks of colicky pain from March 1st to 8th. On latter date, while being moved to a sofa, the patient fainted and has since had continuous sharp, cutting, pelvic pain in the right iliac region. Temperature for first time above normal, being 100° F. Pulse 112 and small. Examination by the vagina now revealed a small elastic and very tender mass bulging down in the vaginal fornix, to the right and behind the uterus. Ectopic gestation was suspected, its nature and gravity explained to the patient and her husband, and a consultation demanded.

I then first saw the patient with Dr. Murtland at her house. She was in fairly good condition, though pale. Temperature 99° F. Pulse 130. The corroborative signs of pregnancy as given by Dr. Murtland were all present.

*Examination, under ether.* Uterus somewhat enlarged, anteflexed, and crowded up toward abdominal wall, toward the left, by a boggy mass lying at its right and posteriorly. Mass had fairly

well-defined outlines, did not dip deeply into pelvis, rose distinctly above pelvic brim, and gave the impression of mobility rather than fixity. No annular constriction of rectum. Mass boggy and with freely pulsating vessels on its vaginal surface. Cervix slightly softened.

*Diagnosis.* Ectopic pregnancy in right Fallopian tube, with probably some intra-peritoneal hemorrhage. Immediate operation advised.

*Operation,* March 12th, at patient's house, assisted by Drs. Murtland, Locke, and Carlyle.

On reaching the peritoneum it was seen to be of the dark hue indicating the presence of free blood in the peritoneal cavity; on nicking the peritoneum a quantity of free blood, mostly dark, but some bright red and with many black clots, gushed out. Without stopping to clear this out, the hand was passed in and separated the mass at the right of the uterus from many recent and frail adhesions about it. It was necessary to ligate a rope-like band of omentum adhering to the mass. On lifting the latter it was seen to consist of the right ovary and tube with a mass of broken-down blood-clots. Irrigation and drainage. Uncomplicated recovery and primary union of wound.

*Examination of specimen.* The tube much dilated in its outer half, and with very thick walls; *was not ruptured*, but from the open end of the tube and still partly attached was protruding a small placenta, and hanging from this by its unbroken cord a fetus about two and one-half inches long.

COMMENTS.—This beautiful and almost unique specimen, which has been mounted by Dr. Freeborn for the Museum of the College of Physicians and Surgeons, is an example of what Bland Sutton aptly terms "tubal abortion"—an occurrence, as he seems to demonstrate, that is a frequent termination of ectopic pregnancies in their early stages, but that is certainly very rare when the gestation has advanced beyond the second month. The case furthermore shows clearly that an extensive intra-peritoneal hemorrhage may take place with but comparatively slight symptoms, and that in some cases at least a peritonitis does occur that more or less effectually shuts

off the effused blood. In this case the blood was poured directly into the peritoneal cavity, as is proved by the specimen removed; the effused blood was partly free and partly shut off by recent peritonitis; and lastly a large quantity of blood had escaped, though the patient's condition gave but slight evidence of it.

CASE XII.—M. C., aged twenty-nine, admitted May 25, 1891. Two days before the admission of this patient to the hospital, I saw her at her home in consultation with Dr. Murtland, under whose charge she had but recently come. Her menstruation began at fifteen, occurred regularly every three weeks, lasting four days and accompanied with pain, especially during the past four years. Married six months ago. Last normal menstruation about March 15th. Three weeks ago, believing herself to be pregnant, she took medicine given her by a professional abortionist, and this was followed by severe gastric and abdominal pains, violent vomiting, and soon after by the appearance of a sharp uterine hemorrhage accompanied with the expulsion of large clots, so that she was convinced that she had aborted. The severe vomiting and metrostaxis continued, and for the latter the uterus was twice curetted. Following this were severe and constant abdominal pains, obstinate constipation, occasional chills, great prostration, and inability to retain any food whatsoever.

Dr. Murtland was now called, put the patient upon rectal alimentation, and suspecting an ectopic gestation asked me to see the case with him.

I found the patient wasted almost to a skeleton, dull and listless in expression, skin ashen and dry, extremities cool. Tongue pale and moist. Temperature a degree or two above normal toward evening. Pulse very small, soft, and about 100. Belly "navicular," and through its thin walls the ascending, transverse, and descending colon could be grasped between the palpating hands and was found fairly "plugged" with putty-like feces. Combined examination, both by vagina and rectum, revealed a small, elastic, sensitive mass lying at the right of the uterus and posteriorly, and displacing the latter a little forward and toward the left. Uterus slightly enlarged. Left appendages seem normal.



*Diagnosis:* Tubal pregnancy; unruptured.

The patient was removed to the Roosevelt Hospital at once.

The extreme prostration of the patient, the irritability of the stomach, and the impacted fecal accumulations, induced me to defer the operation for a few days until there should be some improvement, feeling secure in having her at the hospital, where, at a moment's notice, prompt action could be taken. Within the next three days the bowels were successfully emptied, the stomach retained food, and the patient seemed in better condition. On May 29th the patient was placed upon a table and examined by Dr. Cragin, the assistant gynecologist to the hospital, who was acting for me. A very careful exploration was made and the cyst found very tense. The patient was removed to her bed and shortly after was seized with violent abdominal pain and was soon in collapse, with running, thready pulse, cold extremities, sighing respiration, and blanched skin. Preparations were at once made for abdominal section, which was done as soon as I could reach the hospital.

*Operation:* Patient moribund. Free incision disclosed peritoneal cavity full of blood and clots, which gushed out in enormous quantities; fœtus four inches long lying among clots. Right tube and ovary ligated and removed, ligature including a good-sized spouting artery. Fœtus removed and hemorrhage arrested in one and a half minutes from time of beginning operation. Irrigation and drainage. Infusion of saline solution into veins, with energetic stimulation and administration of oxygen.

Patient regained consciousness for a time, but sank steadily and died the same evening.

*Specimen removed* shows beautifully the distention of the tube, upon whose posterior peritoneal aspect is a large circular tear the size of a silver half-dollar, with irregular and jagged edges.

COMMENTS.—The narration of the case is its own commentary. It caused me much chagrin, as it seemed a life needlessly lost through delayed action. I erred in judgment in waiting, though it seemed a desperate undertaking to interfere earlier, and my fears were quieted by the conviction

that, as she was under close observation in the hospital, even should rupture occur it would still be possible to save her.

CASE XIII.—A. M., aged twenty-eight, admitted Monday, October 18, 1891, at 4 A.M. Married nine years; three children; first, stillborn; second, a cross-birth; last born three years ago. Two years ago had continuous uterine hemorrhage for six weeks; trachelorrhaphy was done. Since that time menstruation has been regular. Last regular menstruation two months ago. Skipped one period, and two weeks later had only a "spot;" no further flow until six days ago, when there was again a slight stain. Last Friday and Saturday there was a rather free flow. One month ago first noticed vague pains in breasts and in left iliac region, the latter pain having become constant and of increasing severity. Yesterday (Sunday) morning, while riding in a street-car, had a sudden, sharp, tearing pain in the left iliac region, and fainted for the first time in her life. Began vomiting as soon as she recovered consciousness; this has continued ever since. Pain intolerable.

On admission, pulse 145; temperature, 97° (taken in mouth); respiration, 30. Tongue very dry. Face blanched, lips bluish, pupils contracted. Expression anxious, though eyes are dull.

*Examination:* Patient is a very large and stout woman weighing 180 pounds. Breast signs negative. Abdomen markedly protuberant and gives tympanitic note on percussion above, with dulness at flanks and below umbilicus. Feeling of resistance on palpation in both lumbar and iliac regions. By the vagina the cervix is felt to be enlarged, patulous, and soft; bloody discharge. Uterine body cannot be defined by bimanual examination on account of tympanitic distention and great sensitiveness of the abdomen. The whole vaginal vault, especially posteriorly, feels boggy and resistant, but no masses are definable. Examination gives great pain.

*Diagnosis:* Ruptured tubal pregnancy.

*Date of rupture:* Eighth week.

*Direction of rupture:* Intra-peritoneal.

*Indications for operation:* Continuing internal hemorrhage.

*Operation,* October 19, 1891, 6 A.M. On reaching the peri-

toneum it was seen to be of dark-blue color from blood behind it, which caused it to pouch into the wound. On nicking the peritoneum an enormous quantity of dark fluid blood and several pounds of dark soft clots gushed out. The left tube was at once sought, found to be enlarged, and on bringing it into view was seen to be the site of rupture. It was with its ovary quickly tied off. Appendages on right side normal and left undisturbed. Peritoneal cavity cleansed by free and repeated flushings; drain introduced; wound closed.

Patient soon came out of ether and reacted fairly well, pulse being only 120-130, and of fair quality though soft. Stimulation administered by rectum, and tube cleared every hour. Tube dry and removed in thirty hours. Pulse 120 and of good force. No pain or tympanites. Taking nourishment.

*Subsequent progress:* Pulse and temperature reached normal on Wednesday, the second day after operation, and have remained so since, and she is now (Oct. 24th) considered out of danger.<sup>1</sup>

*Specimen removed* shows ovary and tube, the latter enlarged except at its uterine end. A large round jagged tear on posterior aspect of tube. Tear the size of a silver half-dollar, projecting through it the embryo surrounded by blood-clots. Embryo partly disorganized and has evidently been dead for some time.

OBSERVATIONS.—1. *As to frequency.* The cases I have presented, although a relatively large number for a single service during a period of only three years, constitute but a part of those which have been treated in the gynecological wards of the Roosevelt Hospital during this time. In addition to those upon which I have myself operated, six others have been operated upon by the assistant gynecologist, Dr. Cragin, when attending during my absence—a total of sixteen cases treated by the knife, and in which the diagnosis was rendered positive. Several cases giving the typical histories, symptoms, and physical signs of tubal pregnancy, and in which the specimens removed have shown ruptured tubes with contained and organized clots, have not been included for the

<sup>1</sup> This patient made an easy, uncomplicated recovery and left the hospital at the end of three weeks.

lack of positive proof in the shape of embryo or villi, although we have felt very certain as to their real origin and nature. *A very much larger number* of cases, also giving equally typical histories, symptoms, and physical signs, have not been interfered with, as the rupture was plainly extra-peritoneal, and have been treated upon the expectant plan. I have, also, during this time, seen many such cases in private practice. From my own experience, therefore, I am impressed with the very astonishing frequency of ectopic pregnancy—a frequency that is even yet, I am confident, but dimly appreciated. I believe that the careful observation and study of specimens will, in the near future, prove to us that most cases of pelvic hæmatocele and so-called hæmato-salpiux, and *many cases of suppurative tubal disease* have their origin in tubal abortion and rupture, or the early arrest of ectopic pregnancy.

Four hours after writing the above observation in respect to the frequency of these cases, I was summoned to the Roosevelt Hospital to Case XIII., just brought in by the ambulance, the rupture having occurred seventeen hours previously. I operated immediately, as has been detailed; and, as the case is doing perfectly well and seems out of all danger, I have included it with the others, making a total of seventeen instead of sixteen, as before stated.

2. *As to etiology.* In most of the cases narrated there was the history of antecedent chronic pelvic troubles following gonorrhœa or septic infection after labor or abortion. (There was an average period of sterility of about five years, but two of the cases were sterile for thirteen years, and in one of these the first and only gestation was ectopic; others had borne children as recently as two years.)

3. *As to symptoms.* (a) Before rupture. Carefully reviewing the histories of all my cases, both of those here reported and of those in which there has been no operative interference, I find that, prior to rupture, two symptoms, and two only, have invariably been present, and these are: 1st. *Some alteration in the character of menstruation.* 2d. *Pain.*

In regard to the first symptom, while the history of previous irregularities may be very misleading, I would lay great stress upon the point that *some change* in menstruation will be found to follow the occurrence of ectopic gestation—*some variation of the previous type*, that is of vast significance if duly weighed. Thus one or two periods may be passed over, or at the first period a scanty flow or a mere stain or splash of blood replaces the normal flow, then ceases, to recur irregularly, or it becomes prolonged, dark, and of unusual appearance. More frequently this irregular flow comes on a week or two after the time for menstruation; but in no case have I failed to find some alteration in the character of menstruation, though I often failed to appreciate its significance.

In every case pain has been present, though often slight or attributed to colic. The usual type has been cramp-like, irregular, often with long intermissions, especially in the early weeks, with a tendency to much greater frequency and severity as the gestation advances—occasionally becoming almost constant. In most cases the pain has been very distinctly localized in one or other iliac region, in correspondence with the site of the sac. In conjunction with these two symptoms, some or all of the corroborative symptoms of pregnancy have, by their presence or absence, served to render the diagnosis easy or difficult; but, as compared with the change in menstruation and the pain, or if not in association, I have come to lay but little stress upon them.

(b) After rupture. In all my cases the symptoms following rupture have been plainly those of internal hemorrhage, and have enabled me to make a positive diagnosis in every case.

4. *As to the possibility of diagnosis.* (a) Before rupture. In five of my cases (excluding Case XI., where the embryo had escaped into the peritoneal cavity from the end of the unruptured tube—*i. e.*, a case of “tubal abortion”) the tube was intact, and in only one of these—*i. e.*, Case XII.—did I make a positive diagnosis; but in this case alone was I dealing with a living embryo and a growing sac, without coëxisting com-

plications. In Cases II., IV., VI., and VIII., though there had been a tubal gestation, the embryo had long since perished, and chronic inflammation of the tubes, with resulting pyosalpinx, had supervened to obscure the history and render the diagnosis mere guess-work. In such cases—and I believe them to be a very frequent termination of ectopic pregnancies—the diagnosis must necessarily and always be difficult or impossible, as shown by Baldy, with whose views and conclusions, as enunciated in his clear, comprehensive, and admirable writings upon this subject, I find myself in almost perfect accord.

Is it fair, however, to cite such cases as proofs of the difficulty of making a diagnosis of ectopic pregnancy before rupture? These are instances where we operate rather for the *sequelæ* of ectopic gestation; where the original condition has, as it were, spontaneously terminated with the death of the embryo, is no longer *per se* an element of great danger, and where even the discovery of the primary trouble is a matter of decision by the microscope. I believe that with the data now in hand, derived from observation and experience, the diagnosis of ectopic gestation before rupture *in a case where the embryo is living* can and should be made.

(b) After rupture. In no instance was there a failure to recognize the nature of the case after rupture had occurred.

*Diagnosis of the direction of rupture.* In all of the cases operated upon, the diagnosis of intra-peritoneal hemorrhage was made, and it was in every instance correct, except in Case I., where the effusion was found to be extra-peritoneal. A study of the histories and of the conditions found on opening the abdomen gives some very interesting data, especially in showing the frequency with which secondary intra-peritoneal follows primary extra-peritoneal rupture and hemorrhage. In Cases VII., XI., XII., and XIII., the primary rupture and hemorrhage were into the peritoneal cavity, and enormous quantities of blood were there found. In Case XI.—the “tubal abortion”—there was a plain history of recur-

rent hemorrhages directly into the peritoneal cavity from the open end of the unruptured tube, partly blocked up by the protruding embryo and placenta—a leakage extending over a period of several days and giving remarkably slight symptoms, although a quantity of free blood was found. In Case VII. the hemorrhage was likewise very gradual, extending over a period of eight days, the patient slowly sinking, but giving few evidences of the internal bleeding.

In Case XII. an enormous and fatal hemorrhage followed intra-peritoneal rupture only one hour before operation. In Case XIII. the hemorrhage had been going on for seventeen hours when the abdomen was opened.

In four cases (III., V., IX., and X.) the original rupture and direction of hemorrhage was extra-peritoneal, and probably accompanied with death of the embryo. In each of these cases there followed a later and secondary intra-peritoneal rupture and hemorrhage at intervals of five weeks, twelve days, four days, and three weeks, respectively. Thus quantities of free blood and clots were found in the peritoneal cavity; together with large extra-peritoneal, intra-ligamentous effusions, with rupture of their investing peritoneum. It is certainly interesting to note the supervention of secondary intra-peritoneal upon primary extra-peritoneal rupture in so large a proportion of cases. Persistence of the signs of continuing or recurrent hemorrhage over relatively long periods of time is a feature that may possibly serve as an important guide in forming an opinion as to the direction of rupture in these cases.

*Dangers following death of the embryo.* As death of the embryo in the intact tube may still be followed by rupture of the tube and intra-peritoneal hemorrhage, as in Cases VII. and XIII.; or by “tubal abortion,” with intra-peritoneal hemorrhage, as in Case XI.; or by suppurative disease of the appendages, as in Cases II., IV., VI., and VIII., so in extra-peritoneal rupture and hemorrhage, instead of the usual limitation of the effusion, with subsequent absorption, we may

have, besides suppuration, as in Case X., secondary intra-peritoneal rupture and hemorrhage, often after considerable periods of time have elapsed, as in Cases III., V., IX., and X.

*Occurrence of peritonitis.* In all the cases where the hemorrhage took place slowly and gradually into the peritoneal cavity there was marked evidence of secondary peritonitis, with recent exudations of lymph and fibrin thrown out about the effused blood and débris.

TREATMENT.—(a) *Before rupture.* My experience convinces me that, as danger does not cease with the death of the embryo, the proper treatment of ectopic gestation, if discovered before rupture has taken place, is, in all cases, removal of the sac and contents by laparotomy.

(b) *After rupture.* If the clinical history and physical signs enable us to diagnosticate the direction of rupture as extra-peritoneal, it is, in my opinion, best to let such a case alone, while constantly on the alert for the evidences of secondary rupture and leakage into the peritoneal cavity. In all cases of hemorrhage into the peritoneal cavity, whether primary or secondary, there is but one course to adopt, and that is the opening of the abdomen and the arrest of the bleeding.



Date.	Name.	Age.	Duration.	Diagnosis.	Condition found.	Direction of rupture.	Date of rupture.	Operation.	Result.	Remarks.
Mar. 21, 1888	E. K.	20	6 mos.	Made	Ruptured	Extra-peritoneal.	6th week.	Laparotomy	Recovered	Continued trouble and increase in size of tumor following early rupture and death of embryo Coexisting pyosalpinx.
May 15, 1888	J. P.	28	2½ mos.	Not made	Tube intact	.....	.....	Laparotomy	Recovered	Extra-peritoneal effusion size of small cocoonut; many large clots and considerable free blood in peritoneal cavity.
July 18, 1888	N. J.	27	3½ mos.	Made	Ruptured	First, extra-peritoneal, later, intra-peritoneal.	Primary, 8th week secondary, recent.	Laparotomy	Recovered	Small blighted embryo found in intact tube. Coexisting pyosalpinx and abscess of ovary of opposite side.
Nov. 15, 1888	M. S.	27	Uncertain	Not made	Tube intact	.....	.....	Laparotomy	Recovered	Very large extra-peritoneal effusion reaching three inches above the umbilicus; also much free blood in peritoneal cavity. Complicating pyosalpinx; early death of embryo.
April 2, 1889	A. P.	32	21 mos.	Made	Ruptured	First, extra-peritoneal, later, intra-peritoneal	Primary, 8th week secondary, 48 hrs. before operation.	Laparotomy	Recovered	Gradual leaking into peritoneal cavity lasting about eight days. Enormous quantity of blood in peritoneal cavity. Died twenty hours after operation.
June 21, 1889	H. S.	29	5 weeks	Not made	Tube intact	.....	9th week.	.....	Died	Early death of embryo followed by inflammation of appendages, and pyosalpinx.
Oct. 17, 1889	M. H.	34	2½ mos.	Made	Ruptured	Intra-peritoneal.	.....	.....	Recovered	
June 4, 1890	M. W.	33	6 mos. (death of embryo about 8th week).	Not made	Tube intact	.....	.....	Laparotomy	Recovered	
Oct. 13, 1890	C. C. C.	32	2¼ mos.	Made	Ruptured	First, extra-peritoneal, later, intra-peritoneal.	Primary, 8th week secondary, 4 days later; recurrences.	Laparotomy	Died	Moribund when operation was begun, and died before its completion. Peritoneal cavity filled with blood and clots.
Feb. 22, 1891	Mrs. B.	38	3 mos.	Made	Ruptured	First, extra-peritoneal, later, intra-peritoneal,	Primary, 9th week secondary, date uncertain.	Laparotomy	Recovered	Large extra-peritoneal effusion with suppuration; also much free blood and many clots in peritoneal cavity.
Mar. 12, 1891	Mrs. P.	32	11 weeks	Made	Tubal abortion, i. e., tube intact with placenta and embryo protruding.	Intra-peritoneal hemorrhage.	Hemorrhage began at 8th week and recurred.	Laparotomy	Recovered	Hemorrhages from open end of unruptured tube were apparently intermittent or moderate.
May 25, 1891	M. C.	29	2 mos. 10 days	Made positively and before rupture.	Ruptured	Intra-peritoneal.	One hour before operation.	otomy	Died	Moribund when operation was begun. Peritoneal cavity filled with blood and clots. Lived six hours after operation.
Oct. 10, 1891	A. M.	28	2 mos.	Made	Ruptured	Intra-peritoneal.	8th week (17 hours before operation).	Laparotomy	Recovered	Peritoneal cavity filled with blood and many pounds of dark clots. Embryo protruding through large rent in posterior wall of tube.

## THE DRAINAGE-TUBE IN LAPAROTOMY.

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SUPRA-PUBIC drainage is the method usually adopted by successful laparotomists to drain the peritoneal cavity, but there are good operators who use vaginal drainage, or combine each method. The most conspicuous advocate of vaginal drainage is August Martin, but as I believe it offers no special advantages and adds largely to the dangers of drainage infection, I will speak only of supra-pubic drainage with the glass tube. It will accomplish all that vaginal drainage can do, and if correctly practised, the dangers of tube infection of the peritoneum are so minimized as to be practically *nil*. This can never be accomplished by vaginal drainage, even in the practice of such an experienced operator as Martin.

It has been urged against the drainage-tube that it does not drain, and that it is a frequent cause of septic infection; that if the cavity is made aseptic drainage is not needed, and if it is not aseptic drainage will not make it so. There is enough truth in these objections to satisfy some operators, but they do not look at the question in its broadest sense, and, I fancy, have had patients to die whose lives could have been saved by the use of a drainage-tube. They cannot appreciate what the tube is capable of doing; they underestimate its value, magnify its dangers, and are misled by too much confidence in their ability to make all peritoneal cavities aseptic. A peritoneal cavity may be made so clean that a culture could not be made from its contents, but there are many cases where this is impossible, and while the peritoneum may digest and dispose of

septic matter, pus, blood, or serum, there are instances where it will not do so, and just here is where the utility of drainage is most manifest. It is not necessary to contend that the drainage-tube will drain. It positively, in most cases, does remove the blood and serum, and takes away the pabulum in which pathogenic germs might otherwise develop and probably destroy life. If we keep the cavity relatively dry the condition favorable to the growth of pathogenic germs has been removed, and they are not propagated in numbers sufficient to cause infection; they finally lose all power of propagation and their vitality or power to do harm is destroyed. Streptococci may remain in the cavity, but we remove the soil on which they live.

It is true that the drainage-tube, placed at the bottom of Douglas's pouch, will not always drain secretions that are given off high up in the abdomen, but in most cases the secretions are from pelvic structures where the fluid immediately gravitates to the lowest part of the cavity and enters directly into the tube. I have had a case where the tube was placed at the bottom of the retro-uterine pouch and did not drain but little for sixteen hours. It was then withdrawn for two inches before any fluid could be removed by suction. It now filled rapidly and I drew out a pint. This convinced me that it is the correct thing to have the fine holes on the side of the tube extend up nearly to the abdominal wall, so that it may drain from the abdomen as well as the pelvis. These tubes are made by Messrs. Lentz & Co., of Philadelphia. The objections that the tube is a foreign body, a source of irritation, and a cause of hernia, are not sustained by facts correctly observed in the practice of experienced and clean operators, and there are fewer sequelæ in cases carefully irrigated and drained. Of course a tube may cause trouble if used by an operator who does not know how to place it, or to properly care for it, and does not appreciate the value of asepsis in every detail connected with its use. The peritoneum will usually absorb and dispose of copious secretions, but it will

not always do so, and this is especially true where it is much diseased, or in old and feeble people. These fluids may become infected by septic matter in the peritoneum, by the introduction of septic matter by neglect of cleanliness during the operation, or by bowel infection.

While the indications for drainage are usually well marked, there are many instances in which we must be in doubt as to its necessity, but in these cases it is safe to drain, for it will do no harm and may save life.

Indications for drainage:

1. To diagnosticate internal hemorrhage in time to stop bleeding by the injection of an hæmostatic, or by reopening the cavity before fatal shock. The tube quickly shows hemorrhage but without it the patient may die because we do not detect internal bleeding.

2. To prevent hemorrhage by keeping the cavity dry and allowing the vessels to contract and the blood to coagulate.

3. Where there are extensive adhesions or continued oozing of blood or transudation of serum; and it is especially indicated in operations on old and feeble people, where either of the above conditions are present in a limited degree.

4. When in doubt as to the necessity of drainage, it is best to use it.

5. Where the peritoneum has been soiled with pus or other matter that is probably septic, or where portions of cysts or other structures that may become devitalized, are left in the cavity.

Koeberlé, of Strasburg, first used the glass tube of Hegar and Kehrer for capillary drainage, and he probably gave to the medical profession the glass drainage-tube generally used.

While the tube is invaluable in the practice of operators familiar with the principles and practical details of its use, it may do harm if used by persons who do not know the kind of a tube that is indicated, or how to place it, or to care for it. The tube should be made of thin glass, never exceeding one-half inch in diameter, open at both ends, with *fine* holes

on the sides, extending within two or three inches of the mouth, and long enough to reach to the deepest part of the pelvis. The small tube will drain as well as the large one, is less painful, and it does not subject the patient to so many dangers. Most of the tubes in general use are too large, too heavy, holes in sides too big, and often otherwise defective. Many of them are too short to be of any service in pelvic drainage, for they will not reach the point where the secretions lodge by gravitation. The tube should be made aseptic by washing inside and outside, and before it is used should be kept in boiling water for ten minutes. It should usually be placed at the lower end of the abdominal wound, below the small intestines, and the point should rest at the bottom of the retro-uterine pouch or in the deepest part of the cavity to be drained. The abdominal incision should be closed tightly around it and the several layers of sterilized gauze placed over the wound, should fit closely to the tube, as should also the thick layer of aseptic cotton. This dressing should be firmly fixed against the abdomen by adhesive plaster, with the mouth of the tube protruding. Over this should be placed a twelve-inch square piece of gum dam, fitted tightly around the neck of the tube, so as to prevent discharges soiling the dressing beneath it. A piece of absorbent cotton should be kept over the mouth of the tube, and when soiled a new piece substituted. The gum dam should be carefully washed and made sterile by keeping it in boiling water ten minutes before using it. The tube should be cared for by the operator, or by an experienced and honest nurse, who recognizes the importance of attending religiously to every detail, and of being in every particular aseptic.

The long nozzle syringe, or a syringe with a small gum tubing attached, affords the best means of emptying the tube. It should be emptied as often as every ten to twenty minutes at first, but as the secretions becomes less the interval may be made longer. Before using the exhausting syringe clean towels should be placed over the abdomen and closely fitted

around the tube, and the hands washed. The syringe should be made clean and kept so by washing immediately after using it, and should be kept in a strong bichloride solution.

The practice of trying to drain the peritoneal cavity by introducing strips of gauze or wick into the tube to its bottom, or allowing shreds to enter the cavity, as practiced by German laparotomists and a few good men in this country, may be the means of introducing septic matter. While aseptic gauze may drain efficiently, it sometimes prevents drainage and causes the blood to coagulate in the tube. This is especially true where capillary drainage is attempted by the use of the wick. I have never seen coagulation where the syringe was used. Probably the most correct exposition of the methods of drainage in Germany will be found in the paper "Drainage in Laparotomy," by Sanger, of Leipzig, at the recent meeting of the Tenth International Medical Congress at Berlin. No mention is made of protecting the dressings from the discharges by the use of gum dam, or of removing the secretions with the syringe. Aseptic gauze may aid in draining a septic cavity in the abdomen or pelvis, but it should be introduced around the tube, and not in it.

The dorsal position should be enjoined until the tube is removed, which should be done by degrees, as soon as the condition will admit, and when bleeding has practically ceased, and there is only a small quantity of clear, inodorous liquid removed, it is no longer needed. If it has to be retained more than twenty-four hours, it should be rotated a little twice daily, so as to facilitate drainage by preventing obstruction in the small openings. The dressings need not necessarily be disturbed to remove the tube, and in a few days the opening will be closed, and hernia will not occur at this point more easily than at other points of the incision.

# A CONTRIBUTION TO THE STUDY OF PUERPERAL PERNICIOUS ANÆMIA.

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THE impetus given to modern medicine by increased facilities for examining the blood promises shortly to throw new light upon many conditions of disease in the pregnant and puerperal patient. Although isolated cases of puerperal anæmia have been reported and the condition of the blood, before and after labor, has been a subject of study to obstetricians for many years, yet, in view of the interest which modern pathology adds to these cases, it seems not disadvantageous to record examples of anæmia in the puerperal condition.

The question of priority in describing puerperal anæmia does not admit of ready answer. The earliest references accessible to me indicate that American physicians were among the first to recognize and describe this condition.

In Williams's *Practice of Medicine* reference is made to a series of cases of anæmia in pregnancy, generally fatal, reported by Channing, of Massachusetts. This report was published in the *New England Quarterly Journal of Medicine and Surgery*, No. 2, October, 1842, and was entitled "Notes on Anæmia, Principally in Connection with the Pregnant State." An abstract of this paper shows that Channing divided his cases into those in which anæmia had some other cause than pregnancy, and those which had some relation to this condition or the puerperal state. In the first group were seven

cases, all of which presented some cause of sufficient gravity, as hemorrhage, to account for the anæmia. Among the cases of the second group was one reported as early as 1832. Other observers beside Channing describe this condition about the same time; among them were Spear—who had four cases—Stephenson, and Jackson. Channing's second series of cases always occurred during pregnancy or the puerperal state. He saw a well-marked case recover in a non-pregnant patient, but all his cases in parturient women died. He naturally gave in these latter a fatal prognosis. Spear's cases (four in number) were not marked by emaciation; in one of them the function of lactation was never established, but mammary abscess was present. The patient suffered from anorexia and vomiting, and died three weeks after confinement, having shown no symptoms of coma or cerebral derangement. In all, Channing reported seventeen cases, six of them seen in consultation by Stephenson and Jackson. Anæmia in these cases was not perceived during pregnancy, but developed from a few days to several weeks after confinement, and was followed, without exception, by a fatal termination. There was no history of previous bleeding, and no detailed physical examinations are given.

Reports of cases of puerperal anæmia in England, together with American cases, attracted the attention of the English-speaking profession to this subject. Dr. Frederick Taylor, in *Guy's Hospital Reports* for 1878, shows that a case of Addison's disease in a puerperal patient was reported as early as 1849, and that sixteen cases had been published in London up to the time of Biermer's paper in 1872. Taylor is of the opinion that Andral had recognized this condition as early as 1823.

In 1847 Bennett, of Bethel, Connecticut, published in the *New York Journal of Medicine* an account of the anæmia of pregnancy and reported a case in which a patient became very anæmic at the seventh month of her second pregnancy, her symptoms being aggravated after delivery, lactation failing,



and a slow recovery to health following. Her third pregnancy was attended by a similar experience of less gravity. In a fourth pregnancy the parturition was entirely normal.

At the same time E. P. Bennett, of Danbury, Connecticut, had two fatal cases, in both of which there was profuse hemorrhage from the nose, mouth, and intestines.

Appleton, in the *Boston Medical and Surgical Journal*, 1851, reports a case of puerperal anæmia in a patient, aged twenty-six, who suffered severely from dyspepsia at the seventh month of pregnancy. During labor she had nose-bleed. Death ensued twenty-three days after confinement. A post-mortem examination revealed petechiæ, small in size and few in number. The blood contained in the heart was pale and watery; the organs were very pallid, and a little serous fluid was found in the abdomen. A history of "cold-catching" and fever occurring several weeks before confinement, together with the nose-bleed during labor, would indicate that the process began during the condition of pregnancy and was possibly of septic origin.

In 1852 Martin, of Philadelphia, described in the *American Journal of Medical Sciences*, N. S., vol. xxiv., page 392, a condition of anæmia occurring in pregnancy, predisposing to serofula or tubercle in the offspring. He deprecated the free bleeding to which pregnant women were occasionally subjected at that day, and advised tonics, strengthening diet, fresh air, and the prolonged administration of iron.

Among the first to contend against the view that many complications of pregnancy were caused by plethora was Cazeaux, who, in 1856, maintained that anæmia was the active agent in producing many of the disorders of pregnancy. He supported his opinion by quoting the researches of Andral, Gavarret, Becquerel, and Rodier, who found that fibrin was deficient up to the sixth month, when it increased above the normal amount. The blood corpuscles were found to be diminished during the entire time of pregnancy. Albumin was also thought to be constantly wanting. The proportion

of water in the blood was found much increased during pregnancy. Cazeaux accounted in this way for the unpleasant symptoms so often attending pregnancy, as well as for hemorrhages occurring before and after labor. His view has dominated the opinions of obstetricians until a very recent day, when modern methods of examining the blood have led to a modification of beliefs regarding this matter.

In 1871 Woodman reported a malpractice suit at a meeting of the Obstetrical Society in London, brought against a physician who had used ammonio-citrate of iron for anæmia during pregnancy. It was claimed that this had been employed as an abortifacient. Dr. Graily Hewitt, who presided over the discussion, had never seen iron, when given for the anæmia of pregnancy, produce ill results.

Gusserow, in the *Arch. f. Gyn.*, 1871, II. 218, reports five fatal cases of extreme anæmia in the pregnant state. The first was a multipara, who died in labor. The second, also a multipara, died three days after labor, the child surviving but twenty-four hours. The third was delivered at the eighth month, and died the next day in delirium. The fourth was confined at the eighth month, and died, also, in twenty-four hours. The fifth, a primipara, aborted at the sixth month; there was no hemorrhage; the delivery was difficult, and sudden death followed. At a post-mortem examination the most striking and constant lesion was extreme cerebral and meningeal anæmia.

One of Gusserow's cases had a ruptured varicose vein; another suffered from diarrhœa; but these he considers insufficient causes for the condition of anæmia, which he reports as peculiar to pregnancy. He calls attention to the fact that most of his cases occurred about the eighth month of pregnancy.

As regards treatment, he considers early transfusion as promising good results, and would advise the early induction of abortion.

Bischoff, writing in the *Corresp.-bl. f. Schweizer Aerzte*, reports the case of a woman, aged twenty-four, who died after

abortion, attended by foul discharges, anorexia, vomiting, great apathy, and nose-bleed; a cardiac murmur was present; there was no enlargement of the spleen, and no leucocytosis.

At the post-mortem examination the medulla of the bones was found violet-red in color, and retinal hemorrhages were also observed. The writer, after a careful differentiation, diagnosed the case as one of oligæmia.

Biermer, in the same journal, in 1872, reported fifteen cases of anæmia, with cachexia, syncope, indigestion, fever, and hemorrhagic tendency, occurring during pregnancy and the puerperal state.

Quinke, writing at this period, strongly objects to the word "pernicious," as being interpreted to mean necessarily fatal anæmia in puerperal cases. He believed that many recovered under appropriate treatment.

Narse, in the *Deutsche Arch. f. Gyn.*, X. 315, reports the examination of the blood during pregnancy in the human species, and also in dogs. The specific gravity of the blood of the pregnant animal he found to be  $1025\frac{1}{2}$ ; the amount of fibrin increased, salts and hæmoglobin decreased.

Barnes wrote upon the relation of pregnancy to general pathology, discussing this subject in the *Transactions of the American Gynecological Society*, Vol. I., 1876, and quotes the opinion of Hippocrates and Galen, showing that the view that the blood in pregnancy is impoverished and in a pathological condition dates back to these ancient physicians.

Musser reviews the literature of the subject in a historical sketch of "Post-partum Anæmia," in the *Medical News* of October 7, 1882.

Among the German contributions to the literature of the subject at about this time are those of Ingerslef, in the *Centralblatt f. Gyn.*, 1879, No. 26; Meyer, in *Arch. f. Gyn.*, 1887, Bd. xxxi., Heft 1; Reinl, in *Beit. z. Geburtshilfe und Gyn.*; Fehling's article, in *Verhandl. d. Deutschen Gesellsch.*, 1886, 1 Sitzung; and Winkelmann, in *Inaug. Dissert.*, Heidelberg, 1888. Winkelmann found slight increase of hæmo-

globin toward the end of pregnancy, but attributes this to the better care which the patients in hospitals receive.

Members of this Society are doubtless familiar with the excellent reports of Cameron in *The American Journal of the Medical Sciences* for January, 1888, and November, 1890, describing cases of leukæmia during pregnancy and the puerperal state. One of his cases presented a marked family history, urgent symptoms of œdema and dyspnœa declining after labor, and the patient became pregnant for the third time after the beginning of splenic enlargement.

Cameron records some additional cases of leukæmia in pregnancy, reported by Paterson before the Edinburgh Medico-Chirurgical Society in 1870, and also a case by Stillman, of Albany, in which the child survived the mother's death.

Cameron's cases are interesting and valuable for the careful examinations of the blood which were made and accurately reported.

An interesting coincidence of serious impairment of the blood, with ulcer of the stomach, which occurred during the puerperal state, is reported by Leube and Fleisch. (*Virchow's Archiv*, lxxxiii. 1124.)

In discussing the pernicious anæmia of pregnancy, Osler, writing in the *Boston Medical and Surgical Journal*, November 8, 1888, takes a hopeful view regarding the prognosis of these cases, and advises arsenic in increasing doses. In his cases, so treated, recovery slowly ensued.

Jaggard (*Medical News*, July 19, 1890) reports a case of leukæmia in pregnancy, with a review of the recent literature of the subject.

Neusser (*La Sem. Méd.*, 1890, lxxix.) considers pernicious anæmia especially apt to occur in the puerperal state during lactation. He seeks to differentiate between anæmia caused by septic infection and simple anæmia by the fact that, in the former, leucocytosis may be observed, which is not present in simple anæmia.

A most interesting and valuable communication upon the subject is that of Schroeder, in the *Arch. f. Gyn.*, 1890, Bd.

xxxix., Heft 2. In common with Reinl, of Prague, he denies the existence of a physiological chloro-anæmia of the pregnant state, but asserts that the corpuscles and hæmoglobin are quite equal to those of health. Anæmia in pregnancy he attributes to bad hygiene, and anæmia in the puerperal state commonly follows hemorrhage at labor. Diseases causing anæmia in the non-pregnant will produce the same result during pregnancy. He finds an equal decrease in cells and hæmoglobin in the anæmia of the pregnant and puerperal condition not caused by septic infection. Neither he nor Meyer observed a great decrease in hæmoglobin with an average number of blood-cells.

In Müller's recent extensive work upon *Obstetrics*, we find the statement that pernicious anæmia bears a close relation to pregnancy, especially when pregnancies follow each other in rapid succession. Pregnancy is very frequently terminated by miscarriage, more often than abortion (according to Max Gräfe), in one-half of all cases. Loss of blood easily causes death in these cases. Sometimes death occurs early in the puerperium. Müller records three cases of cure.

The treatment advised by Gusserow—viz., early induction of labor—he considers best, when performed early; this, however, is difficult from obscurity of diagnosis. Leukæmia also stands in something of the same relation as pernicious anæmia, and probably because the pregnancy hastens on the disease.

A comparison between the composition of the blood in the non-pregnant and pregnant may be obtained from the following table, taken from Müller's *Handbook*:

Not pregnant.	Pregnant.		Puerperium.				Observer.
	Mean.	Mean.	4th day.		8th day.		
Mills.	Mills.	Mills.	Mills.	Mean.	Mills.	Mean.	
5.59 per c.mm.	3-4.75	4.43	.....	.....	.....	.....	Ingersleff.
.....	3-4.75	.....	2.33-4.75	.....	.....	.....	Fehling.
5.9	.....	5.2	2.70-5.40	4.62	3.13-6.43	5.10	Meyer.

In this brief review no effort has been made to mention all the contributions to medical literature on this subject, but sufficient, we think, has been given to indicate the development of medical belief in two directions : first, that the condition of pregnancy produces *per se* a condition of anæmia ; and second, that pregnancy in the normal patient, under good surroundings, does not produce a condition of anæmia, but tends rather to a temporary but physiological plethora.

The case which I desire to report is an example of anæmia occurring during pregnancy and the puerperal state, which recovered under appropriate treatment.

The patient, Annie L., aged twenty-four, white, domestic by occupation, gives a family history of heart disease on the part of the father, and dropsy as a cause of her mother's death. The family was large ; the first child died of some unknown cause two weeks after birth. Her previous history was that of typhoid fever six years before ; the usual diseases of childhood early in life ; two previous pregnancies, during which she says menstruation persisted. The performance of this function was usually attended with pain and nose-bleed. At four different intervals in her life she suffered with dropsy and shortness of breath. Four months before delivery she asserts that her general health was good, her color being that of a robust general condition. It may be stated that a more detailed history could not be accurately obtained, owing to want of knowledge or inclination on her part. She was admitted to the medical wards of the Philadelphia Hospital a few weeks before delivery, with well-marked jaundice. Catarrhal jaundice, with enlargement of the liver, was diagnosed by the medical staff, and the patient was treated by phosphate of sodium, 30 grains three times daily. Later, her condition of pregnancy was discovered and she was transferred to the obstetrical department.

Her history of the illness which led her to come to the medical wards, narrates that six weeks before admission to the hospital she suffered from headache, pain in the back, nose-bleed, and swelling of the feet, with fever, especially marked at night ; later, jaundice occurred. While in the medical wards, progres-



sive anæmia became manifest. While no positive history could be obtained at the Maternity regarding the exact period of pregnancy, the patient was evidently between seven and eight months advanced. Labor occurred on March 4, 1891, the position and presentation being normal. The first stage of labor lasted twenty-three hours, the second but a few minutes, and the third twenty-five minutes. The child weighed 6 pounds 6 ounces; the placenta 1 pound and 2 ounces. Labor was almost bloodless; there was little suffering, and no injury was done to the genital tract. The appearance of the patient after labor was that of striking anæmia. While naturally a blonde, her color was extremely pallid. From time to time during the puerperal state there occurred nose-bleed, and also vaginal hemorrhage of slight amount. The temperature ran an irregular course, reaching 102° F. twice and once falling to 97°, with irregular fluctuation in the intervals. The patient's pulse was rapid, small, and weak, remaining at 120 for several days after delivery. A temperature chart of the patient's condition during the puerperal state is appended. No evidence of septic infection was observed during the puerperal state. The child was not allowed to nurse from its mother, but did well with a wet-nurse, and later with artificial feeding. An examination of the patient's blood on March 19th by my colleague, Dr. Henry, revealed the following: Number of red corpuscles, 1,750,000; percentage of coloring matter, 35; no increase in the white cells. The red corpuscles were much altered in size and shape, but there were none large enough to deserve the name of megalocytes. There were numerous microcytes. The percentage of red corpuscles and of coloring matter was 35; and this fact would tend to exclude chlorosis and bring the case into the category of pernicious anæmia. On the other hand, the mass of the blood was not materially diminished, as it invariably is in advanced stages of pernicious anæmia, the blood flowing readily and freely on slight puncture of the finger. From the standpoint of the blood-changes alone Dr. Henry was inclined to regard the patient as a chlorotic, whose blood on the supervention of pregnancy had gradually assumed the characteristics of puerperal anæmia. An examination of the patient's urine during the puerperal state showed a trace of albumin, but casts were not found at any time.



The treatment employed during the puerperal period consisted of feeding with small quantities of milk, broths, and eggs given at frequent intervals; arsenic, in Fowler's solution, in small but increasing doses, and the inhalation of oxygen. This gas was freshly prepared in the hospital pharmacy and inhaled several times daily in accordance with the patient's sensations, the inhalation being discontinued whenever giddiness began. An effort was made at one time to reduce the frequency of the pulse by the administration of digitalis, but its use seemed irrational, and, as no improvement followed, its administration it was discontinued. The patient's convalescence, although not rapid, was steady and satisfactory.

Physical examination during the puerperal state revealed no organic lesion; a cardiac murmur and the blanched condition of the mucous membranes available to inspection were all that was observed. Involution proceeded fairly well, although less perfectly than in the healthy patient. At the expiration of three weeks the patient was transferred to the obstetrical wards, where the same treatment was continued. She recovered a fair degree of vigor, and was then employed as a servant at the Maternity pavilion, where she could be more immediately under the supervision of the head-nurse. On June 5, 1891, three months after delivery, she was subjected to a physical examination, with the following results: Her appearance was that of average health and vigor; her face showed considerable color, the conjunctivæ being slightly injected. Both legs showed very marked varicose veins, those upon the right being especially pronounced. At times, after the patient had been upon her feet, the distention of these veins became so great that a bandage was necessary. The most prominent group was found on the inner side of the right knee. On the right thigh the patient had two large inflammatory spots the size of a half-dollar, red and tense on the surface, indurated beneath, presenting the appearance of ordinary boils. There was a small spot on the left thigh and one on the left buttock. These were painful and hot to the touch. The cervical glands beneath the lower jaw, in the vicinity of the submaxillary salivary gland, were swollen and tender. This was well marked on the right side, where there was a distinct mass, very hard and tender. No redness of the skin was present. The patient could not swallow

easily, and stated that this complication began four months previously. There was no inflammation about the tonsils or pharynx observed, nor were the tonsils enlarged. The lymph-glands in front of the sterno-cleido-mastoid muscle on each side were distinctly swollen and tender, and also the post-cervical glands. Those of the inguinal and saphenous regions were hard and like marbles to the touch, but not tender or showing evidence of acute inflammation.

In the thorax the pulmonary sounds were normal. The area of the heart was slightly enlarged; its position was normal; its apex beat was an inch inside and an inch and a half below the nipple. The heart-sounds at the apex were normal, and over the aortic region also. Over the base a slight blowing murmur was heard with the first sound; this became more marked on slight acceleration of the heart's action, and was heard also toward the sternum. The area of liver dulness began at the fifth rib, extending downward to the margin of the ribs. The spleen was very slightly enlarged. There was no tenderness on deep pressure over either the spleen or the liver. No abnormalities could be detected about the abdomen.

The patient's history since delivery, as narrated by herself, was as follows: She had been growing steadily stouter and stronger, weighing 156 pounds when examined. She had felt perfectly well, except that since delivery she had pain in the right leg, which she located in the bones. Tenderness or pain was complained of on striking the tibia. No such symptoms were located elsewhere. For a period of three days at one time she vomited every morning, and was giddy one night before retiring; this giddiness was promptly relieved by lying down. There was no dimness of vision; the appetite was good and the bowels moved regularly.

For the following examination of the eyes I am indebted to my colleague Dr. de Schweinitz:

The reaction of the pupils was natural; the pupils were equal in size. In the left eye the disc was a horizontal oval, the nasal half nearly normal in color, the temporal half a little pallid, with the exception of a slight haziness in the neighborhood of

the disc, and some peripheral absorption of the pigment epithelium. There were no abnormalities in the right eye; the conditions were precisely the same. In each the bloodvessels were normal in size and carried normally colored blood.

Examination of the urine at this time showed it to be clear, amber-colored, the specific gravity 1.020; slightly acid in reaction; no albumin; no casts.

Examination of the genital tract of the patient showed an old laceration of the perineum, half an inch in extent, with prolapse of both vaginal walls of moderate degree. This laceration occurred in a previous labor. The uterus was three inches in depth, slightly anteverted. The cervix was enlarged, slightly eroded with endo-cervical catarrh. The internal os was almost closed. Both perimetria revealed no evidence of previous inflammation. A muco-purulent secretion, slight in amount, was observed to issue from the cervix.

The patient's general condition continuing about the same, Dr. Henry very kindly favored me with another examination of her blood on July 13th. The number of red corpuscles was then 5,806,000 per cubic millimetre; the hæmoglobin was 62.5; white corpuscles not increased. The condition, so far as the blood was concerned, was identical with that so common in chlorosis, namely, there was a normal number of corpuscles—an increased number, in fact—with a deficient percentage of hæmoglobin.

We may summarize this case as follows: a young woman, a multipara of uncertain antecedents, denying syphilis and presenting no positive signs of syphilitic infection, gave a history of having suffered during previous pregnancies with dropsy, nose-bleed, and functional disorders, such as are often observed in anæmic patients between the sixth and seventh months. At her third pregnancy she was seized with rapid deterioration of the blood, causing hæmatogenic jaundice; the exact cause for this rapid anæmia is not forthcoming. She was delivered in spontaneous, bloodless labor of a viable child, which developed normally. The blood of the patient's infant was several times examined and found to be normal. Her puerperal period was characterized by hemorrhage from the

mucous membranes, a very rapid pulse, tardy involution, and serous lochia. Under the carefully ordered administration of food, oxygen, and arsenic she passed from a condition of threatened pernicious anæmia to that of ordinary chlorosis. The exact meaning and bearing upon the case of the enlarged lymphatics, the indurated masses described upon the thighs, and the tenderness over the tibiæ, I cannot satisfactorily explain. The point of interest as regards the prognosis and treatment lies in the favorable issue of the case as regards both mother and child, and in the apparent efficacy of the treatment employed.

## ATRESIÆ OF THE GENITAL TRACT.

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THE etiology of atresia<sup>1</sup>, as well as that of other congenital anomalies of the female genital tract, has ceased to be a puzzle, since we have learned that they are not due to a freak of Nature, but are the result of arrest of development at certain phases of embryonic life.

However, it is not intended in the following to enter upon these interesting questions involved, but simply to offer a few practical points, relative to the surgical treatment of atresia, which have suggested themselves to me while dealing with a number of such cases in private as well as in hospital and dispensary practice. While there is nowadays unanimity of opinion as regards etiological facts, there still exists a great deal of confusion in regard to the proper way of treating atresia, and I may therefore be pardoned for adding my limited experience.

In the text-books and treatises on this subject, the different varieties of atresia are usually grouped according to their etiology and the location of the occlusion. From a practical standpoint I consider it better to divide them into two large groups :

1. Cases of atresia or absence of the vagina, where *no* functioning sexual organs are found behind the occlusion, therefore not accompanied by retention of menstrual secretion.

<sup>1</sup> The name "gynatresia," covering all kinds of occlusions found in the female genital tract, appears to be very appropriate and deserves general adoption.

2. Cases where the sexual organs are sufficiently developed to produce the catamenial secretions, which, being prevented from finding their natural outlet, must stagnate and lead to distention of the secreting cavities, thus causing the formation of blood cysts, called hæmatocolpos, hæmatometra, hæmato-salpinx, according to their seat.

This latter group may be subdivided, as atresia may occur in the double as well as in the single genital tract.

The reason for this somewhat arbitrary classification will be readily understood, as it will be conceded, that the cases mentioned in the first category will seldom, if ever, require surgical treatment, while those of the second class will invariably cause grave symptoms, necessitating the surgeon's help.

Although atresia of the vagina is a rare occurrence, I have been fortunate in seeing a comparatively large number of cases during the last few years. Three of them were associated with retention of the secretions and were promptly operated upon. One of these occurred in a patient with double vagina and uterus. The left side was patent and menstruated regularly; the right side was occluded and had developed into a large unilateral hæmatocolpos and hæmatometra. Eight cases of the first group, viz., atresia with rudimentary uterus, were not subjected to surgical treatment.

It is true that a few cases have been described, where in absence of the vagina, an artificial opening was made and that this was apparently followed by development of the formerly rudimentary uterus and subsequent menstruation. Still I agree with the majority of writers, that surgical interference is not warranted in cases of defect of the vagina, where, with the aid of careful bimanual palpation under ether, the sexual organs are found missing or in such a rudimentary state of development that the establishment of normal functions seems beyond possibility. If the patient be single, she should be made acquainted with her condition and marriage forbidden. In case the condition has been discovered after the patient's marriage, the state of affairs may be a precarious one for the

interested parties; still, I hold that it is not the surgeon's legitimate task to attempt to establish an artificial cul-de-sac in lieu of the natural sexual canal. My reasons are the following:

1. The attempt to effect an artificial opening in absence of the vagina is fraught with a certain amount of danger, owing to the close proximity of rectum and bladder. In spite of all proper precautions—catheter in bladder, finger or bougie in rectum—these organs, or even the ureters and peritoneum, can easily be injured. Injuries to these organs are much more liable to result in these cases than where a blood-cyst has been formed, which serves as a guide in which direction the incision has to be made.

2. Even in case of an apparent, immediate success of the operation, disappointment is bound to follow. The newly made vagina will quickly close up again through cicatricial contraction, even if dilatation is kept up for a length of time. Three of the cases which came under my observation had previously been operated upon by others. Hardly a trace of these futile attempts could be discovered.

3. Furthermore, there is an ethical point involved in this question worthy of our consideration. Are we justified in submitting a patient to any surgical risk, however small, for the sole object of establishing an artificial receptacle for the husband's penis in order to gratify his copulative desire in the presence of absolute impossibility of conception and parturition?

In view of these reasons, combined with the experience gained from the total failure of others, I have refused operative interference in every instance, and I have not yet had occasion to change my mind on this subject. All my cases were submitted to a careful bimanual exploration under narcosis, which generally revealed the presence of a transverse band in the pelvis, with a small, flat body, never larger than an almond, in the centre. I could not reconcile my mind that this body could be reached without danger of injuring adja-

cent organs, and it furthermore seemed to me more than improbable that this little body would develop into a state in which it could discharge its normal functions, for no other reason than the fact that an incision had been carried up to it.

The histories of these cases being similar, I shall omit them and only briefly relate one case, which was of special interest on account of a rare lesion :

A governess, twenty-three years of age, consulted me in 1885. She had been previously told by a gynecologist in Germany that she ought not to marry. She now was engaged, and wanted my opinion. She was a healthy looking girl, with perfectly female habitus, but her pudenda were scarcely developed. Further examination revealed total absence of the vagina ; between the labia a spot covered with mucous membrane, which on pressure could be pushed back, thus forming a short cul-de-sac of not more than one-half inch in depth. Careful palpation of the pelvic contents showed that a small, flat body, the size of a bean, in the centre of a thin transverse band, was the only rudiment of the uterus. I explained her condition to her, and strongly advised her against marriage. About a week later she came back and told me that she had since had sexual intercourse with her intended, and everything was in best order. On examination I was surprised to find a perforation extending from the above-mentioned cul-de-sac to a place in the rectum about two inches above the sphincter. According to her statements, the cohabitation had not been accompanied by pain nor by hemorrhage. There was also no incontinence of the bowel, and she would not be persuaded to have the tear repaired. As the newly married couple went out West, I have not heard from them.

Turning now to the second group, viz., gynatresis with retention, there certainly is no other class of surgical cases in regard to which so many antiquated ideas are still in vogue. It seems as if every obsolete opinion of the pre-antiseptic era based on erroneous conclusions was still finding its way into the text-books, like a hereditary disease.

True enough that Dupuytren, Boyer, Sabatier, Cazeaux,



entirely condemned the operation as too dangerous, in spite of the fact that the condition itself is a very dangerous one, which, if left alone, must surely lead to death.

True enough that, since men like Langenbeck, Schuh, Nélaton, Billroth, and others met with fatal results after the opening of atresia with retention, this operation was considered a *noli me tangere*. But it is remarkable that this unwarranted dread of bad results should still exist in modern times, when we have narrowed down our mortality in promiscuous laparotomies and vaginal hysterectomies to from 3 to 5 per cent.

Let us then inquire what those dangers are, whether they are real or visionary, and how they can best be avoided. Summarizing the views held by the different writers up to date, the dangers are mainly the following :

1. Injuries to adjacent organs.

2. Rupture of the tubes, if they also be distended by the retained secretions.

3. Septic infection.

1. The danger of injuring the neighboring organs—bladder, rectum, ureters—cannot be entirely denied, especially if the occlusion be very deep and we therefore be obliged to go through a thick layer of tissue before reaching the blood-cyst. Still, with proper precautions and the necessary manual dexterity, the actual danger is insignificant ; besides, should lesion occur, it would not in itself prove fatal.

2. While, as a rule, very little importance is given to the dangers just mentioned, a great deal has been written about the fatal rupture of the tubes following the opening of the atresia. The majority of fatal results have been attributed to this accident, and the most careful instructions have been given how to avoid it. For my part, I cannot share the fear which has troubled the minds of many operators, and consider it the outcome of wrong deductions from wrong suppositions.

Why should tubes, if distended by retained menstrual

secretions, have such an abnormal tendency to rupture after the occluding obstruction has been removed? I will concede that extraordinary rough manipulation might cause the rupture; but direct trauma is certainly no more likely to have this effect in these cases than in any other case of encysted fluid within the peritoneal cavity. The fimbriated ends of the blood-filled tubes must certainly be impervious, or else distention would be impossible. The uterine end of the tube might be patent, but then the fluid must flow out toward the point of least resistance, viz., the newly established opening; the walls must then collapse, and rupture is impossible. Should, however, the uterine end of the distended Fallopian tube be closed, it is not comprehensible why rupture should be more likely to occur *after* instead of *before* evacuating the hæmatometra, when the uterine contractions are most violent. Even allowing that contractions may take place in the tubal walls themselves while they are fixed by peritoneal adhesions, it is beyond my comprehension why this condition should be so preëminently more likely to lead to rupture than in ordinary hæmato-, hydro- or pyosalpinx. From a careful study of the published histories of fatal results ascribed to rupture of distended tubes subsequently to operations for imperforate hymen or atresia of the vagina, I am convinced that they were not due to any direct trauma, but that septic infection from outside was the primary cause leading to an abnormally friable condition of the tubal walls.

3. Taking all this into consideration, I must hold that the much-dreaded danger of fatal rupture of tubal sacs is only imaginary, and that its greatest importance lies in the fact that it is apt to direct our attention from the *only actual* danger, viz., *septic infection*.

As soon as this fact will be generally recognized and our efforts centred on the maintenance of strictest asepsis during the operation and after-treatment, fatal results from this simple surgical procedure must become a thing of the past.

It was my good fortune that the symptoms of my first case,

which I operated in 1888, were of so urgent a nature that they required immediate help. Therefore, I was unable to previously consult the text-books, and simply modelled the plan of my operation according to modern surgical principles, unbiased by views held in the pre-antiseptic period. The absolutely smooth recovery of this case as well as my following two cases proved to me that I had been right in my assumptions.

As detailed histories of my first two cases can be found in the *Medizinische Monatsschrift*, December, 1889, I shall refrain from relating them again, nor shall I add an account of my third case, which was practically the same as Case II.

The technique and principles employed in my operations for atresia with retention are as follows :

The strictest antiseptic precautions are of paramount importance. Without going into details, I should like to mention one point which does not always receive the necessary attention, viz., the proper disinfection of the field of operation. I have often observed that operators would rely upon douching the vagina with some antiseptic fluid for obtaining an aseptic field. This is absolutely insufficient unless the parts have first been subjected to a thorough mechanical cleansing, which I always effect by scrubbing the folds of the vagina with mollin containing 10 per cent. of creolin, by means of a brush.

While the patient is in deep narcosis the atresia is made accessible through the use of retractors. An incision is made with the scalpel, and, if the thickness of the occluding membrane does not exceed one inch, the blood-cyst is at once opened. Where there is a great deal of intervening tissue, it may be advisable to use the finger or blunt end of the scalpel in dividing the remaining septum, while bladder and rectum are carefully watched. At any rate, the opening should be established without first using a trocar to draw off part of the fluid.

This brings us to the question, whether rapid or gradual evacuation should be employed—a much-ventilated topic. I

admit, that anybody who still looks for the rupture of the tubes as the most dangerous factor in those cases, and fears that the change of abdominal pressure is sufficient to bring on this result, is right in being extremely cautious in letting off the retained fluid. Some have gone so far as to allow it to slowly ooze out through a small opening during a full week before they dared to make an incision. Still there is not a single case on record where rupture of the tubes, after rapid evacuation, took place on the operating-table, where it certainly should be supposed to be most likely to occur.

On the contrary, I take this as corroborative evidence in favor of my claim that septic infection from without is always the *primary* cause of the patient's death, and that the infectious changes in the uterine and tubal walls and their peritoneal covering, rendering them abnormally friable, *secondarily* lead to their rupture and general peritonitis.

If we, therefore, maintain perfect asepsis during and after the operation, we will feel perfectly secure in handling those cases according to the principles of modern surgery, and will abandon all methods as obsolete which call for the gradual evacuation and which are solely based on the visionary dangers of tubal rupture. The gradual method certainly involves a great deal of risk, owing to the difficulty in keeping the parts aseptic in the presence of the natural discharges from the bladder and rectum and the constant oozing of a fluid which has the tendency to rapidly become decomposed.

In advocating rapid evacuation, I do not say that the whole fluid should be allowed to gush out at once. It may flow out in a steady stream, which can easily be regulated in the same way as we gradually empty large ovarian cysts in our laparotomies. But the idea of letting it ooze out, drop by drop, during a period of days ought not to be considered good surgery in 1891.

After the cavity has thus been emptied of its contents, the incision should be enlarged as much as possible, and, whenever feasible, a large-sized piece of the occluding membrane should

be excised. The opening must be made as large as possible, as it has a great tendency to shrink afterward on account of cicatricial contraction, and for that reason may possibly necessitate a second operation. Where the intervening layer of tissue is not so thick as to prevent coaptation, the two edges of mucous membrane should be brought together and united by a circular running suture.

This being done, I must consider it an important step to thoroughly wash out the newly opened cavity with a warm Thiersch's solution or sterilized water. The hæmatometra fluid is usually very thick and sticky, and if allowed to adhere to the uterine walls will quickly become decomposed. I found it very convenient to introduce my finger into the cavity while it was being flushed, and to remove the adhering blood-rests by gentle movements. At the same time, one can try and ascertain in a cautious manner whether the uterine ostium of the tube is closed and the tube extended by fluid, or not. The fear of thus causing rupture did then no more enter my mind than when examining any other gynecological case, barring extra-uterine pregnancy.

Having satisfied myself that the cavity is thoroughly emptied of its contents, I pack it with iodoform gauze. This method is preferable to any other of the many recommended for after-treatment, for the following reasons :

1. It insures perfect drainage from the cavity, thus preventing stagnation and decomposition of the secretions.
2. It protects the cavity against infection from without.
3. It keeps the newly established opening patent.

I might also add a fourth point for those still in fear of tubal rupture, namely, that in taking the place of the evacuated fluid it ought to be an effective preventative for this dreaded accident.

The advantages of this method are so evident that I need not go further into details and compare it with other appliances that have been devised, as, for instance, rubber

drainage-tubes, glass cones with or without lateral openings, sponge tents, trocar-canula, etc.

The cavity having been packed with gauze, an antiseptic pad is fastened between the thighs by means of a T-bandage, and the patient put to bed. As soon as she recovers from the effects of the anæsthetic, she is placed in a half-sitting position in order to facilitate drainage. The antiseptic pad is changed as often as it becomes soaked. The bowels are moved on the second or third day. On the fourth day the patient is placed in the lithotomy position, the iodoform gauze carefully removed, and, after a thorough irrigation, the cavity again packed with gauze. The dressing is changed every four or five days, while the cavity will be rapidly decreasing in size.

As soon as the uterus has assumed normal size and shape, it is time to determine if the tubes are in a normal condition before the patient is allowed to get up. Should they be found distended by retained blood, they will have to be removed by laparotomy.

One word about the time of operation. We are generally advised to select the time between two menstrual epochs. But if the latter should be irregular, the proper time would be hard to define. Besides, if we should happen to first see the patient during her time of menstruation, when all her symptoms are greatly aggravated, there is no good reason why we should not at once proceed to relieve her severe suffering. I have done so in my first case, and am unable to see any contra-indication for it.

# OVARIAN AND FALLOPIAN ABSCESS OPENING INTO THE BOWELS.

## FOUR UNREPORTED CASES.

BY ARCHIBALD McLAREN, M.D.,  
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IN studying the literature of this subject I was surprised to find how very few cases of this nature have been reported. For instance, Tait, in his last work on *Abdominal Surgery*, out of some five hundred laparotomies performed for ovaritis, salpingitis, pyosalpinx, and ovarian abscess, does not mention a single case. Gregg-Smith in his last edition on *Abdominal Surgery* gives no advice whatever as to the treatment of this very interesting, very important, and, as I believe, not uncommon class of cases. Sajous's *Annual* for the last three years does not record a single case. In the *Index-Catalogue of the Library of the Surgeon-General*, under the head of "Fallopian Abscess," I find little or nothing. Under "Ovarian Abscess" there is quite a long list of articles, the great majority of which are reports of individual cases. Some of the headings of these partially describe the cases which they report, so that I was able to determine that out of fifty or more, five had discharged through the rectum. Of these fifty cases there were fourteen reported deaths.

On turning to the subject of "Pelvic Cellulitis," I find that out of some hundred individual cases reported, there were eighteen which had discharged through the rectum, with twenty-two deaths. Of course, I recognize the fact that we

can draw very few deductions from this heterogeneous list of cellulitic cases.

For abdominal surgery, combined with post-mortem observations, has proven in the last few years, that the correct pathology of intra-pelvic inflammations, is the one taught us long ago by Bernutz and Goupil. But now that the pathology of pelvic inflammations is better understood, and now that we also know that the great majority of such inflammations which go on to suppuration are not cellular but tubal and ovarian in character, can we not safely draw some conclusions from the old recorded cases of pelvic cellulitis? Some authorities would say No; for, although believing in pyosalpinx and ovarian abscess, they still teach that pelvic abscess that opens into the bowel arises in the cellular tissue. But why should an intra-peritoneal collection of pus not follow the same course as the cellular abscess? Why should not the pus work its way to the surface in the line of the least resistance, and discharge either through the anterior abdominal wall, the bladder, vagina, or into the intestinal canal? That this is the course of a certain large proportion of tubal and ovarian abscesses, I shall be able to show, I think, by the teachings of some authorities, the histories of a few reported cases, as well as by some four cases which have come under my own observation.

The differentiated ovarian and tubal abscess I have found almost exclusively in the society reports which I had at hand. Probably many more have been reported, but I have not been able to find them in my hasty search.

The question whether the septic germs reach the ovaries and tubes through the lymphatics, as Lucas-Championnière and a few others still teach, or by an extension direct along the mucous membrane, as is now believed by a great majority of surgeons, cannot interest us, particularly when studying the class of cases now under consideration. I can simply follow the majority, and my own best judgment, by believing that most pus tubes are simply the result of an extension of



the inflammation direct from the endometrium, the minute calibre of the tube as it passes through the uterine wall being closed by the intensity of the inflammation, so that the tube is prevented from draining into the uterine cavity. I believe also, that most ovarian abscesses are due to the same cause, that is, from the passage of pus from the tube onto, and then into, the ovaries. But, whether this pathology be correct or not, after the abscess is formed what is its course and termination?

I recall very distinctly a case which, on account of its unfortunate termination, impressed itself very strongly upon my memory. I saw the case about a year ago, with Dr. J. B. Merrill, of Stillwater, Minnesota. In this case the pelvic contents were solidly matted together, following a recent peritonitis. Douglas's cul-de-sac was filled with a hard, fibrous mass, which pushed the pouch well down toward the apex of the perineal body. No distinct tumor could be made out at this time; her pulse was high and her temperature ranging about 101°. I diagnosed pyosalpinx, but did not advise immediate operation very strongly, but said that I thought an operation would probably be necessary at some future time. She gave no history of having had pus discharge from the bowel. I did not see this patient again for three weeks, perhaps a month, when I found her suffering from meningitis, from which she soon died. At the autopsy septic meningitis was demonstrated, while behind the uterus and opening into a coil of the small intestine was a tubal, fecal abscess, about as large as a small hen's egg. This case—because an operation might perhaps have saved her life—has made a very strong impression upon my mind, and probably has influenced me in similar cases to advise an exploratory laparotomy much more strongly than I had ever done before.

Dr. T. G. Thomas, of New York, in the discussion of Dr. Sutton's paper on pelvic abscesses, read before the American Gynecological Association in 1888, mentions two deaths which have occurred in his experience, where the abscess rup-

tured into the rectum. He therefore advises against opening a pelvic abscess into that viscus. I remember a case which occurred in Dr. Thomas's service at the Woman's Hospital in the year 1884, when what was then called a cellular abscess ruptured into the rectum while Dr. Thomas was in the act of opening the abscess with a pair of scissors, the operation being done through the vagina. Perhaps this was one of the two cases mentioned by Dr. Thomas, for I am under the impression that Dr. Bradley, who succeeded me, said that this woman afterward died and that a post-mortem showed the existence of an ovarian abscess. Dr. Sutton, in this same paper on the other hand, says that a majority of the cases of pelvic abscess occurring in his practice which had discharged into the rectum, had gotten well.

Dr. William H. Parish, of Philadelphia, in a paper which he read in 1889, on pelvic abscess, before the American Medical Association, says: "That while it is true that many cases opening spontaneously *per rectum* recover promptly, yet there is always great danger that gas or fecal matter will escape into the abscess cavity and establish a permanent fistulous track." He also says that, "even though the pus seems quite ready to escape into the rectum, I prefer to open through the vagina."

Dermoid cysts of the ovaries, from their tendency to inflammation, are apt to suppurate, break down, and discharge through the rectum. Emmet and Winckel, in their recent works on the diseases of women, speak of this tendency. Winckel speaks of the danger of peritonitis and death from suppuration of these cysts.

Most authors, and justly too, it seems to me, are fearful of septicæmia from the constant suppuration kept up by the entrance of gas and fecal matter into these abscesses. Of course, all depends upon the direction of the opening into the abscess cavity, and its relation to the current through the intestinal canal. This is well illustrated in Dr. Skene's work on *Diseases of Women*. Some of these abscesses dis-

appear after a certain length of time, some become chronic, others are fatal, but a great many questions regarding the prognosis of these cases we are not in a position to answer to-day. The symptoms of these two conditions are practically the same, according to my experience; they probably commence with those of endometritis, followed by a more or less severe attack of peritonitis, going on to a septicæmic condition. But at the time of the initial discharge of the abscess the symptoms improve, and perhaps entirely disappear. So far as the physical signs go, they may be very pronounced, if the abscess be large; or very unpronounced, if it be small.

I have seen three cases, two of which I will speak of later; the other one, seen at Stillwater, as already mentioned, where the discharge from the abscess had been so small in quantity that the patient's attention had not been called to the pus which had been discharging from the bowel. When the abscess assumes a chronic form, the most important symptom is the continued high temperature, the thermometer showing for weeks a temperature of  $100^{\circ}$  to  $101^{\circ}$ , as will be noticed in several cases herein reported. This temperature is accounted for by the constant absorption from the poorly drained fecal abscess. The physical examination is sometimes only that of pelvic cellulitis, but usually there is a distinct tumor, either at the side of or behind the uterus, which is slightly movable; the uterus is usually enlarged, is somewhat fixed and tender. The uterus and tumor generally move together.

The treatment of this class of cases I believe to be of much more importance than that of ordinary pyosalpinx, for a collection of pus in the tube may become innocuous and cheesy, remaining for years, perhaps, without producing much trouble. But in these cases the danger of septicæmia is so great that active treatment is necessary, if we will not run the risk of losing many valuable lives. When the danger is great, then it seems to me we are justified in undertaking a serious operation.

Dr. W. H. Byford, of Chicago, in speaking of the treat-

ment of pelvic abscess opening into the rectum, advises the dilatation of the sphincter, and the rectal opening, if it can be found, should be dilated and the abscess-cavity thoroughly cleaned and drained. But, as Dr. Jaggard, of Chicago, said, in discussing Dr. Byford's paper, the danger of infection and the difficulty of securing proper drainage would probably make this line of treatment very unsatisfactory. Still I myself can see no objection to trying this method of treatment and resorting to more radical measures later, if the symptoms of infection make the case more urgent or if a cure cannot be effected by this method of treatment. I should certainly not favor opening a pelvic abscess through the rectum. A counter-opening into the vagina, as suggested by Dr. Wylie, would give more perfect drainage, and I should consider good surgery, if the abscess-cavity was low down, and providing it could be safely reached through a vaginal opening. But that there is danger from a vaginal opening is shown by the accidents which have been reported following vaginal section and vaginal aspiration in just such cases.

Dr. Wylie reports two cases before the American Gynecological Association in 1888, and Dr. A. W. Abbott, of Minneapolis, has shown specimens before the Minnesota Academy of Medicine, demonstrating the danger of vaginal aspiration. Vaginal section will probably change a certain number of these cases into recto- or entero-vaginal fistulæ; this would be a gain as far as the danger of life is concerned, although such a result would not be a pleasant one for the patient.

In a few of these old chronic cases, fistulous tracks extend to the anterior abdominal wall and discharge along Poupart's ligament. That it is not always safe to pass a drainage-tube down these fistulous tracks and through into the vagina is proven by a case which I reported before the Minnesota State Medical Society two years ago. This was a case of Dr. Wheaton's, where the fistula was dilated and a sound passed down through the abscess-cavity. As the end of the instru-

ment seemed to be so close to the vagina in the cul-de-sac, a counter-opening was made and the drainage-tube drawn down into the vagina. This tube soon caused ulceration of the femoral vein, and the patient died from hemorrhage, with symptoms of peritonitis. The autopsy showed that the tube had passed into the abscess cavity, then out into the sigmoid flexure of the colon, then back into the vagina.

Laparotomy, it seems to me, is by far the best method of treatment for this class of cases. I am sure that it is safer, even though we make a vaginal opening later, for with the hand in the pelvis we can more safely open the abscess-cavity from below. Dr. William Goodell, in discussing Dr. Sutton's paper before the American Gynecological Association, advises this method in the treatment of high pelvic abscess. He says that he considers the treatment of abscess opening into the bowel very difficult, and he advises an abdominal exploration with the hand in making a counter-opening through the vagina. If the abscess is a deep one and does not protrude into Douglas's cul-de-sac, I cannot see that any other method should be thought of. In three of the cases which I have operated upon they have been seated deep in the pelvis—two small tubal abscesses, one small ovarian abscess—having coils of intestine laying around them, so that they could not possibly be reached from below without injuring the intestinal canal.

Of the cases which I find reported, one is reported by Dr. Richelot before the Paris Surgical Society, in December, 1888, in which he speaks of removing a pyosalpinx opening into the rectum, which had been diagnosed as a fibroid of the uterus. Dr. A. P. Dudley, of New York, reports a case before the New York Obstetrical Society, April 2, 1889. The operation was done six years after the abscess first formed and broke into the rectum. In this case the intestines were very generally matted together—so much so that Dr. Dudley tore the intestine in one place before getting down to the tube. He found a pelvic abscess connecting with a

pus-tube and opening into the rectum four inches above the anus. He curetted out the abscess-cavity and stitched up the rectum to the posterior surface of the uterus. Two weeks later Dr. Dudley reports the recovery of this patient, she having had no trouble with the fistula.

In the discussion of this case Dr. Gill Wylie said that the method which he followed in such cases was that of laparotomy, and then to open the abscess from the vagina, as he considered this the most conservative method.

Dr. Polk, of New York, had operated upon similar cases where vaginal drainage had failed to close the rectal opening, and where he finally enucleated the diseased ovaries and tubes, as Dr. Dudley had done, with the best results. He did not approve of puncture or vaginal opening when the pus was deep in the pelvis. He speaks of the difficulty of closing the rectal opening—and suggests the alternative of packing the pelvis with iodoform gauze—and perhaps forming an abdominal intestinal fistula, as, he says, “a horridly wretched condition in which to leave the patient.”

Dr. Janvrin, of New York, reports the removal of a large suppurating dermoid of the right ovary, some four years before, which had perforated into the rectum four and one-half inches from the anus. The bowel was opened for the distance of one and one-half inches, and was stitched up by the aid of reflected light, and the patient recovered.

On October 15, 1889, Dr. A. P. Dudley reports before the Obstetrical Society of New York an operation for pyosalpinx, where he found it impossible to remove the left ovary and tube on account of the dense and intimate adhesions to the intestine. The patient recovered and did well afterward. It has occurred to me that perhaps this was a case of an old abscess which had discharged into the intestine and cured itself.

Dr. Dudley also reports at this same time the case of a patient who had a pelvic abscess, which at two different times had discharged through the rectum; the first discharge having

occurred four years previously, the second four months before the operation. Still, at the time of the laparotomy no opening into the intestine was discovered; the diseased appendages were successfully removed and the patient recovered.

CASE I.—Before the Minnesota State Medical Society in 1889, I reported the case of a young, unmarried girl, who gave the history of having passed at least a quart of matter from the bowel ten days before the operation. I assisted Dr. Wheaton when he removed from this patient a small, suppurating ovarian cyst, which was firmly adherent in the pelvis. A careful examination with both the eye and the hand could detect no opening into the bowel. The patient did very well, indeed, until the third day after the operation, when, after a dose of calomel, she suffered the most profound collapse, and soon died. The autopsy showed the abdomen to be filled with fecal matter, which had escaped from a small, buttonhole-like ulcer on the anterior surface of the rectum, about four inches from the anus. I think that Trendelenburg's position in this operation might have saved the life of the patient.

CASE II.—On January 17, 1891, I operated on a young Swede girl at St. Luke's Hospital in this city, where I found a small ovarian abscess firmly connected with and opening into a portion of the small intestine. The patient was in a most desperate condition before the operation, her temperature having ranged from 100° to 102° for three weeks before that time. She was suffering from general anasarca, was very much bloated, and at times was in a semi-comatose condition; her urine was almost solid upon boiling; these symptoms having appeared soon after a pelvic peritonitis, and seemed to be due to the pressure upon the ureters of the solid inflammatory mass which filled the pelvis. All of the tissues were in such a softened condition from the general œdema that the very dense adhesions between the coils of intestine in the pelvis could not be broken up without tearing the gut. As it was, the outer coats of the intestine were torn in one place, necessitating a suture, and the operation had to be practically abandoned, the patient dying inside of the next twenty-four hours. An earlier operation, it seems to me, ought to have given this poor girl some chance for her life.

CASE III.—On the 5th of June in this year I operated upon Mrs. H., a dispensary patient, forty-seven years old. She was mother to several children, never having had a miscarriage. This woman appeared to be sixty years of age; she was in a very feeble, wretched condition, with a temperature ranging from  $100^{\circ}$  to  $101\frac{1}{2}^{\circ}$ . She nearly died from septicæmia at the time of the influenza last February. She gave a history of having had pus discharge from the bowel at different times for several years past. She had never been well since the last child was born—a little over ten years ago. At the time of the operation the right Fallopian tube, which contained a fecal abscess, was found strongly adherent to a portion of the small intestine. Trendelenburg's position facilitated the removal of the diseased tube, which was stripped off from the intestine; the longitudinal opening, which was fully  $1\frac{1}{2}$  inches in length, was then sutured with fine silk; the left uterine appendage was also very much diseased, the inflammatory mass being nearly as large as a goose-egg. No drainage-tube was used. The patient had a movement of the bowels on the second day, mixed with a little blood. On the fourth and fifth days she had a little diarrhœa; after that day she slowly recovered, a chronic bronchitis being the only symptom to mar her convalescence.

CASE IV.—Mrs. C. was referred to me by Dr. Johnson, of St. Paul. She was twenty-six years old; married four years, never having been pregnant. Last Christmas she had a sudden and profuse attack of leucorrhœa, combined with dysuria, those symptoms being accompanied by a burning pain in the left side, the leucorrhœa and pain having continued ever since. She was confined to her bed for four or five days about Christmas. She was then up and about until March 26th, when she suffered with what her physician supposed to be a typhoid attack, which confined her to her bed for about two months, her temperature ranging between  $100^{\circ}$  and  $102^{\circ}$ . Two weeks before she was admitted to the hospital, she first noticed blood and pus with the stools. On the 27th of June Mrs. C. was operated upon at St. Joseph's Hospital in this city, the diagnosis being a suppurating ovarian cyst on the left side. Laparotomy and Trendelenburg's position demonstrated a small, suppurating, ovarian cyst on the



left side, which was very adherent. This was aspirated, and at least three ounces of thick pus were drawn from the abscess. The collapsed ovarian sac, making a mass as large as my fist, was then enucleated; the Fallopian tube also contained pus, and was adherent to the ovary. The right Fallopian tube was large, diseased, very strongly adherent, and opened into the large intestine above the sigmoid flexure of the colon. This was separated, and an opening left in the intestine fully two inches long. The edges of the intestine were carefully washed off, and the intestine sutured with Lembert's suture, twelve or fifteen fine silk stitches being used to close up the opening. The bowels moved on the third day, with some blood, and the patient recovered without a bad symptom.

Trendelenburg's position has been to me a very important aid in the proper treatment of such cases. Both Drs. Clement Cleveland and Florian Krug, of New York, speaking before the New York Obstetrical Society, mention using this position in pelvic surgery, and highly commend it. The advantages of this position are: *first*, that on account of the elevated position of the pelvis, the intestines gravitate into the upper part of the abdominal cavity, leaving the pelvis entirely clear, so that the operator and his assistants, as well as the spectators, can see exactly what is being done; *second*, in a dark room the operating-table can be turned toward the window and all the light that there is can be thrown directly into the pelvis, showing any weak or eroded spot in the intestinal wall and aiding very much in the repair of any intestinal opening; *third*, this position allows a better protection of the general peritoneal cavity from sepsis. I am in the habit of protecting the peritoneal cavity with large, square pieces of bichloride gauze, which are easily tucked in behind the uterus and spread out over the intestines, so that if a pus tube should rupture during its enucleation, or an intestine be torn, the peritoneum is not so apt to be soiled.

Trendelenburg's table is a cumbersome, expensive piece of apparatus, only available for hospital operating-rooms. I

have used an operating-table devised by Dr. Hallowell, of St. Paul, on the principle of this table; this is made of three thin pieces of board, joined together with common door-hinges. It is laid upon the operating-table and covered with a rubber sheet; then, if it is necessary to elevate the pelvis during the operation, an assistant can raise the board to any angle. This device is cheap and portable, so that it can be used in private as well as hospital practice. On one occasion I had one made in a few minutes by a country carpenter, when I found it necessary to operate upon a patient away from the city, not having my own board with me.

My conclusions are: that many cases of small tubal and ovarian abscesses are overlooked and allowed to die, with the diagnosis of typhoid fever and tuberculosis; that many of them are situated deep in the pelvis and open into the small intestine; that in all deep abscesses laparotomy, with Trendelenburg's position, is the only safe method of treatment.

# THE POSITION OF ABDOMINAL SECTION IN THE TREATMENT OF SEPTIC PERITONITIS AFTER CHILDBIRTH.

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As the obstetrician is always likely to encounter septic peritonitis in his practice, he is more interested perhaps than other practitioners in the discussion of the surgical treatment of peritonitis at present occupying medical societies and journals. For one who is not himself an experienced surgeon it must be difficult to determine whether abdominal section should ever be done or advised for septic peritonitis after childbirth. There is strong testimony, it is true, in favor of the operation from specialists in abdominal surgery. Tait says: "I have now come to the deliberate conclusion that it is an act of almost criminal omission to allow a case of peritonitis to die without an abdominal section." An American gynecologist has declared that "there are hundreds of men and women dying from peritonitis who might be easily saved if the medical profession would recognize the fact that a majority of such cases could be saved by prompt surgical interference." And another, in a recent discussion, spoke of more than sixty cases of puerperal fever in one town, which had all been allowed to die without an abdominal section, implying that a majority might have been saved by an operation. On the other hand, Lusk says that he has seen washing of the peritoneal cavity tried in many cases for peritonitis, but they had all died; and a number of others experienced

in obstetrical work have expressed the same opinion. The unprejudiced student, without personal experience in surgery, would very likely accept the latter statement as correct, for, as a result of the unfortunate separation of gynecology from obstetrics which is seen in America and England, the opinion of the gynecologist on any obstetrical matter must often be regarded with the suspicion that it springs from a very one-sided education and experience. The proposition of an Englishman to do the Porro operation for placenta prævia, and the argument of an American in favor of Cæsarean section for the relative indication as opposed to the induction of premature labor, on the ground that the latter is always fatal to the infant, have shown the medical world to what curiously incorrect ideas a too narrow specialism in gynecology may lead.

The reason for the radical difference of opinion in regard to the efficacy of abdominal section for septic peritonitis after childbirth appears in a careful study of the reported cases. "General suppurative peritonitis," "purulent peritonitis," "diffuse suppurative peritonitis," all cured by abdominal section as they appear by title in medical journals, will be found on close investigation to be, in the vast majority of cases, nothing of the kind. Case after case will disclose itself as a localized collection of pus,<sup>1</sup> with perhaps recent leakage into the general peritoneal cavity, or a localized septic process, with perhaps a peritonitis of the kind that Schroeder long ago described—a peritonitis assuming every form except the pure, diffuse suppurative exudate, but a peritonitis that may be called benign, that has a conservative object in limiting a suppurative or septic invasion of the abdominal cavity, that

<sup>1</sup> The fact that the quantity of pus found is sometimes very large is no proof that it is not encysted and shut off from the general peritoneal cavity. Thus Hensch reports a case in which 2000 c.cm. of pus were evacuated through an incision between the umbilicus and ensiform cartilage in a child four years old. It is evident from the description of the case that the pus was confined in the upper portion of the abdominal cavity. ("Ueber einen Fall von purulenter Peritonitis geheilt durch Laparotomie," *Berliner klin. Wochenschr.*, No. 4, 1891.)

is not in itself septic, and that disappears with marvellous rapidity when the cause is removed. This peritonitis is very different from the true diffuse suppurative variety, in which there is no limitation, in which the whole length of intestines is covered with an exudate of a highly septic character, in which innumerable collections of pus are held between coils of intestine, and in which the whole abdominal surface is absorbing the poisonous products of microbe activity. Fortunately the latter form is comparatively rare. Of eight operations which I have done for septic conditions with peritonitis after childbirth, only one has been for a true diffuse suppurative peritonitis, and this ended fatally. The following case in my own practice will serve as an example of many which are reported as cases of suppurative peritonitis saved by coeliotomy, but which are in reality cases of circumscribed abscess within the peritoneal cavity, with an accompanying benign peritonitis.

CASE I.—A young prostitute was brought into the Philadelphia Hospital with a high temperature and signs of beginning peritonitis. She gave a history of a recent attack of gonorrhœa, and physical signs showed that she had just aborted, very likely as a result of criminal interference. There were masses of exudate about both broad ligaments. The uterus was thoroughly disinfected and purgation tried, but without success. The temperature rose higher, the pulse became very rapid and weak, the abdomen was much distended and excessively sensitive. An abdominal section was done when the girl was in a very desperate condition. To the right side of the uterus, communicating with the fimbriated extremity of the tube, a large collection of pus was encysted; there was neither an old pyosalpinx nor an ovarian abscess. The whole peritoneal surface was intensely inflamed, but not covered with purulent exudate. There were large masses of fibrinous exudate toward the pus cavity. The pus was evacuated and the abdomen washed out. Large masses of exudate were removed. The girl made a rapid recovery.

It is in such cases that an operation will usually be successful, and is the only means of saving life, while in true, diffuse suppurative peritonitis an abdominal section is almost always perfectly useless, and only serves to torment the last moments of the patients, to cause the family added anxiety, and to throw discredit upon surgery.

It is true that a few successful cases have been reported by Lücke, Barlow, Godlee, Israel, Tait, Bouilly, and others, but it is not unlikely that the number would be reduced if the cases called diffuse suppurative peritonitis, but which were really localized abscesses, could be weeded out.

The very nature of diffuse septic peritonitis after childbirth precludes, as a rule, the possibility of surgical aid. It is often the consequence of infection of the connective tissue and lymphatics of the vagina, uterus, and the broad ligaments, and the peritonitis only develops after the pelvic connective tissue is thoroughly infested with pathogenic microorganisms, and very likely after metastasis has occurred. The following case illustrates the futility of an operation in this condition :

CASE II.—A colored woman was brought into the University Hospital ten days after delivery, with the history that fever developed a day or two after the child was born. In spite of intra-uterine disinfection the high temperature continued, and signs of peritonitis developed. At the time of admission, the temperature was over  $106^{\circ}$ , the pulse rapid and feeble, consciousness clear; the abdomen was greatly distended and sensitive. On vaginal examination, infiltration and fixation of the left broad ligament was discovered. To give the woman her only chance for life, an abdominal section was immediately done. To my surprise, the peritoneum was perfectly healthy. The left ovary, however, was much enlarged, and there were upon it one or two flakes of purulent lymph. I removed the ovary and found it later streaked internally with thin sero-pus. The woman died on the next day. In the meantime a diffuse purulent peritonitis had developed, but the cause of the former symptoms was found in an infection of a torn perineum and an infiltration of the

perivaginal connective tissue and the base of the broad ligament. The parturient tract above the outlet of the vagina was perfectly healthy. In this case the septic process had continued eight days, had involved the connective tissue on one side of the pelvis, had invaded the ovary and had brought the woman to the verge of death, but had not yet involved the peritoneal cavity, although at the time of the operation it was on the point of doing so.

I have recently assisted a friend in a similar case, with a like result. When the infection occurs in the pelvic connective tissue and the development of peritonitis is secondary, it is plain that an operation can do nothing. On the other hand, the favorable cases of limited suppuration in the abdominal cavity—associated perhaps with intense but benign peritonitis—are seen when the septic invasion of the peritoneal cavity occurs at one spot of small area and without a long previous illness which depresses the vitality and diminishes the resisting power of the peritoneum. A small rupture or perforation of the uterus, the extension of a septic endometritis through the tubes to their peritoneal extremity, and necrotic or septic processes in pelvic tumors of all kinds, the result of childbirth, are usually the causes of limited suppuration within the abdomen and furnish the cases in which an operation often yields brilliant results. The following cases may serve as examples of the results that can be obtained by operative treatment in a limited septic process within the abdomen, the result of childbirth.<sup>1</sup>

CASE III.—I had delivered a lady in whom labor was obstructed by a large adherent ovarian tumor, after puncture of the cyst and the performance of version and extraction. Everything went well until the fourth day, when fever developed and gradually increased. I was obliged to leave the city and turned the

<sup>1</sup> Extra-peritoneal suppuration in the pelvis after childbirth is not considered, for it does not necessarily cause peritonitis, and the abscess can be evacuated usually without opening the peritoneal cavity.

patient over to a medical friend. On returning two weeks later I found her at the point of death, with septic symptoms and signs of peritonitis. I opened the abdomen at once under partial anæsthesia, evacuated a putrefying ovarian cyst of large size, found an intense grade of non-purulent peritonitis, washed out the peritoneal cavity, excised the lower portion of the omentum, which was thickened to about one and one-half inches, and closed the abdomen, with drainage of the sac. The patient at once improved and finally recovered.

CASE IV.—A multigravida recently under my care, on abdominal palpation was found to have two large fibroid tumors on the anterior wall of the uterus. Delivery was affected at term without difficulty. A few days later the endometrium became infected and it was only by a vigorous fight that the septic invasion was apparently limited and the threatening symptoms dispelled. Fever of a low grade, however, continued for six weeks in spite of treatment. The fibroid tumors could be felt fixed in the pelvis. There developed, finally, some abdominal distention and tenderness. Fearing a localized septic process which might at any time become general and get beyond control, I at length operated and removed the fibroid tumors by a comparatively easy myomectomy. There was a pelvic peritonitis, and in one of the tumors quite a large necrotic patch. On the day after the operation the temperature was normal, for the first time in six weeks.

CASES V. and VI.—In a case of double ovarian abscess after abortion, with general peritonitis, in which to open the abscess-cavity after the operation a fresh corpus luteum was cut through in both ovaries, and in a case of sharp general peritonitis after abortion, with suppuration around the fimbriated extremities of the tubes, the results were perfectly satisfactory.

Admitting that the results of operative treatment are very different, as the septic or purulent peritonitis is localized or general, two questions are naturally suggested. Is it possible before operation to distinguish between a localized supplicative or septic peritonitis, with a general peritonitis of a benign character, and a true diffuse supplicative peritonitis? And,



if this distinction can be made, is it necessary to urge an operation in the one condition and refuse it in the other?

As a rule, the clinical history of localized septic and purulent peritonitis after childbirth is pretty distinctive. The development of serious symptoms is gradual, and it is commonly days and even weeks before the necessity for an operation becomes evident. There is always time for the trial of medicinal treatment and disinfection until the slow but steady progress downward, in spite of treatment, plainly demands more radical measures. The physical signs, too, may be confined to a small area. It is wonderful how long such cases can continue and to what extreme reduction of vitality they can lead while the septic process remains strictly localized. The course of a diffuse suppurative peritonitis is, as a rule, very different. The progress is exceedingly rapid. The patient may die in a few hours, before the pus has time to form, and at most a few days will effect an extraordinary reduction of vitality. The pulse from the first is rapid and feeble and the face has a drawn and anxious look. There may be fever, great distention of the whole abdomen, intense pain, dulness on percussion, and early delirium, but each or all of these symptoms may be absent.

The diagnosis, however, is obscured on the one hand in the insidious form of general suppurative peritonitis, in which death may only occur after six or eight days, and in which all distinctive symptoms may be absent; and, on the other hand, in cases of localized suppuration associated with an early developed intense general peritonitis of a non-septic character. While, therefore, it is often easy to determine that one is dealing with a limited septic invasion of the abdominal cavity, occasionally one must operate in doubt as to the true condition of the peritoneum.

In reply to the second question, it is impossible to give a definite and concise answer. Under certain circumstances an operation is plainly useless and should not be attempted. If one sees the case late and the patient is in a desperate condi-

tion, if the signs of general suppurative peritonitis are plain enough to admit of a diagnosis, operative treatment is useless and should not be attempted. If the suppuration were localized, the patient might be rescued, even though apparently in as desperate straits; but a general suppurative peritonitis, after it has gained a certain headway, is beyond aid. Again, if, in addition to the symptoms of general peritonitis, there is an infected wound low in the parturient tract with infiltration of the pelvic connective tissue, an abdominal section will only hasten death. On the other hand, one will sometimes be in doubt whether the suppurative peritonitis is local or general, and in such a case we should give the patient the benefit of the doubt and operate. Again, if one sees an undoubted case of general septic peritonitis early enough, having in mind the bare possibility of success from an operation as shown by a very few reported cases, the abdomen should be opened to give the patient the only chance for life. Time should not be lost by waiting for indubitable evidences of pus-formation, as advised by several operators, but, as soon as local disinfection and purgatives fail and the woman does not respond to a vigorous stimulation with counter-irritation over the abdomen, no more time should be lost.

It may be that by this plan the abdomen will be opened in the hemorrhagic stage of septic peritonitis before the formation of pus and before the occurrence of universal adhesions, and that better results will be secured than have hitherto been obtained. But this is scarcely to be expected, for the time lost in the attempt to conquer the beginning attack by medicinal treatment and disinfection will be enough, as a rule, to place the patient beyond aid; and yet it would be a rash surgeon indeed who would operate immediately at the commencement of every peritonitis after childbirth. To judge with approximate correctness when to operate, one must have had experience in the thorough disinfection of the parturient tract and in the successful medicinal treatment of peritonitis after childbirth. Even thus fortified, the conscientious obstetri-

cian, I think, will often operate too late, and will occasionally err by operating unnecessarily. There are obscure fevers of a dangerous character in the puerperal state in which the presence of some septic focus must be suspected after all non-septic diseases are excluded by the absence of distinctive symptoms, as in the following case:

CASE VII. *Fever after delivery, high in degree, of long continuance, and associated with alarming symptoms.*—A young English girl, illegitimately pregnant, gave birth to a healthy infant without difficulty. Directly after delivery the temperature was found to be elevated. Fever continued for several days, and then subsided. For a few days the girl's temperature was afebrile; then came a second rise, which persisted and grew worse in spite of all treatment. The uterus was curetted and disinfected. There were no positive signs of peritoneal infection; the urine was free from pus, although there was constant pain over the kidneys. As the temperature-record resembled that of puerperal pyelitis, the afebrile period corresponding to the time in which the infecting germs are travelling up the ureters, the urine was repeatedly examined for pus, with negative results. Typhoid fever was considered, but the idea dismissed, as there were absolutely no symptoms of it except the continued fever. Finally, believing, as an obstetrician must in such cases, that the fever was of a septic nature, in default of proof to the contrary, and as a last resort—for the girl was in imminent danger of death—the abdomen was opened. No evidence of disease could be discovered. The peritoneal cavity was thoroughly washed out, and twenty-four hours later the temperature was normal. Fever again developed, however, but not to such a degree, and the girl ultimately made a perfect recovery. The whole illness lasted many days. The operation certainly was of temporary benefit, if nothing more; at any rate, it in no way complicated the subsequent course of the disease, and it relieved my mind of the suspicion that there was an undetected focus of infection either in the appendages or the peritoneal cavity. The nature of this attack is still a mystery to me. It might have been one of those cases of septic peritonitis without pus- or lymph-formation

as to the existence of which modern research leaves no doubt. But, in the absence of all peritoneal symptoms, this is unlikely. I am still inclined, as I was at first, to believe the case one of infection through the urinary tract. I have seen some five or six such cases, two of them fatal, and in the profound depression, the long continuance, and the course of the fever, the case under description resembles them. There was, however, as already stated, no pus in the urine; but late in the course of the disease the urine, drawn fresh from the bladder, swarmed with microbes. It is quite possible that there may be infecting non-pyogenic germs which can produce symptoms of the utmost gravity by an invasion of the urinary tract from the bladder to the kidneys. Once arrived in the latter, they, or their products, pass into the general circulation and give rise to the symptoms of systemic disease. This whole subject of infection without the genital tract, especially of the bladder, during puerperal convalescence, deserves careful attention. These cases are insidious, difficult of recognition, stubborn in their resistance to treatment, and often very dangerous.

Some curious and erroneous advice as to the time to operate in septic peritonitis may be found in contemporary medical literature. One writer resorts to abdominal section when the patient becomes delirious; another, when the "temperature indicates pus;" another, when dulness on percussion shows the presence of pus within the abdomen. Whereas, it is well known that consciousness often remains distressingly clear in these cases to the last; that the abdomen may be filled with pus while the temperature is normal, or even subnormal, and that it is often impossible to get dulness on percussion in suppurative peritonitis, on account of the tympanites. In one of my cases, after the patient was anæsthetized, I carefully percussed the abdomen and got everywhere a tympanitic note, and yet at least two quarts of pus were evacuated when the peritoneal cavity was opened.

From an experience in the successful medical treatment of septic peritonitis, from a number of post-mortem examina-

tions, and from the personal experience in the operative treatment just detailed, enlarged and corrected by a study of all the references to the subject in the *Index Medicus* for the past five years, I have ventured to formulate a few rules for my own guidance in the future, in one of the most difficult situations of obstetrical practice.

When a woman, after childbirth, exhibits signs of beginning peritonitis, disinfect the parturient tract, if this has not already been done, and give concentrated saline solution, desertspoonful every fifteen minutes, till the bowels begin to move freely. Within twenty-four hours the symptoms may be entirely dissipated.

If this fails and the symptoms have not yet become urgent and do not point indubitably to a general suppurative peritonitis, try stimulation by food and alcohol, with counter-irritation over the abdomen. Do not be afraid of opium if its administration seems advisable, for the only symptom it masks is pain, which is of no value, and the limitation of absorption is no loss, for the failure of purgatives shows that it is not to be depended upon.

When, to one who has seen both successes and failures from medicine in peritonitis, it is plain that medicinal treatment accomplishes nothing, open the abdomen, evacuate any collection or collections of pus,<sup>1</sup> or remove, if possible, the septic focus, as, for an example, an infected tumor; irrigate and drain.

If the case is one of general suppurative peritonitis, strain a point in operating early. Base the diagnosis mainly on the rapid and profound reduction of strength and the quick, feeble pulse. Look for general distention of the abdomen, for pain, for dulness on percussion, for high fever, for constipation; but remember that all these symptoms may be absent, and do not wait for them.

<sup>1</sup> Bouilly reports a case in which an encysted collection of pus was found in the pelvis and evacuated, but another in the neighborhood of the spleen was overlooked; the patient died.

If diffuse suppurative peritonitis is discovered, the operator should rapidly explore all portions of the abdominal cavity with the whole hand, while an assistant follows it with the irrigating-tube; four rubber drainage-tubes are placed—one in the upper portion of the cavity, two in the lumbar hollows, and one in Douglas's pouch. The wound is simply pinned together with safety-pins, which transfix the tubes. As little ether should be given and as little time consumed in the operation as possible. It is better to operate on the patient as she lies in bed.

In view of the doubtful prognosis, at best, do not promise much to the patient's family, but, when the time comes, give them to understand that an operation offers the only chance for recovery.<sup>1</sup>

<sup>1</sup> In an "Analysis of 1322 Recent Unselected American Laparotomies" (Pittsburg Medical Review, September, 1889) the following statistics are given: Of 19 sections for purulent peritonitis, 12 died, 6 were saved; the result in one case not stated. Of 2 sections for puerperal peritonitis, both died. Of 3 sections for septic peritonitis, 2 died, 1 recovered. M. Price reported to the Philadelphia Obstetrical Society, June 7, 1889, 3 operations for puerperal peritonitis, all fatal. Bouilly reports 6 operations for puerperal peritonitis, with 4 deaths and 2 recoveries (Cong. Franc. de Chirurg., Proc. verb. 1889-90). Stuehlen has collected 43 cases of acute suppurative peritonitis from all causes, treated by drainage. Of this number 9 died and 34 recovered. In 54 cases of circumscribed peritonitis there were 45 recoveries (Inaug. Dissert., Strasburg, 1890).

CONGENITAL MALFORMATION OF THE GENITAL TRACT. PERSISTENCE OF THE SINUS URO-GENITALIS AS A COMMON OPENING WITH THE URETHRA. BICORNATE UTERUS.

BY C. P. STRONG, M.D.  
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MRS. M., an American, aged thirty-one, seven years married, entered my service at the Free Hospital for Women for relief from sterility, offensive discharge, dyspareunia. The history she gave me, in so far as it relates to the points of interest in this case, can be considered under the two heads of menstruation and marital relations.

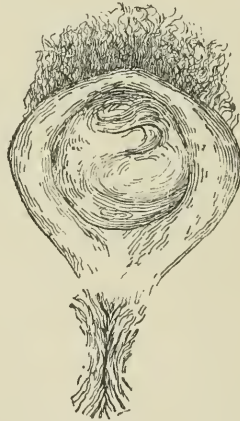
*Menstruation.* At the age of fifteen the patient first noticed pelvic pains located in a comparatively small area in the suprapubic region. The pain she described as constant, but not severe, except the occurrence of monthly exacerbations, during which she was confined to bed, the pain at this time assuming a more "colicky" character. This condition lasted for eight months, when, in the midst of one of these periodical attacks, a sudden copious hemorrhage took place, with complete relief for a few weeks, when the pains began again, to be relieved in six months by another hemorrhage; and thus, with gradually decreasing intervals, it continued for four years, until she was twenty years old, since which time she has menstruated regularly and painlessly each month, the length of the period being seven days and the amount never excessive.

The patient was married at twenty-three, entirely unconscious of anything abnormal in the condition of her genital organs. Attempts at coitus were for many months excessively painful

both to herself and her husband, and the act seemed incomplete. Latterly, however, it was apparently perfectly performed, although there has always been discomfort, amounting occasionally to pain on the patient's part and little satisfaction to the husband. Desire for coitus has never existed.

*Physical examination.* Inspection showed absence of the clitoris and prepuce. Extending from the mons veneris on either side were small, rounded elevations, which occupied the position of the labia majora, terminating just below the level of the urethra, at the upper limit of the sphincter ani muscle. There were no labia minora, even in a rudimentary condition. Just below the pubes, with no appreciable amount of intervening tissue, was a funnel-shaped opening, its outer end ragged and irregular as though ruptured, its lining a distinct mucous membrane. Between this opening and the upper margin of the sphincter ani

FIG. 1.



Represents the accurate size of the external genital organs.

muscle was a smooth surface of perhaps half an inch of apparently normal skin unmarked by any depressions. The total distance from the pubes to the sphincter ani muscle was barely more than one inch. The funnel-shaped opening mentioned above terminated internally in a large cavity, into which the finger was easily and painlessly introduced, encountering only slight



tonic resistance at one point, which was apparently the entrance to the bladder. I could nowhere touch the walls of this cavity except in front, where they came against the posterior part of the symphysis pubis. No fluid escaped by the side of the examining finger, but with the catheter a pint or more of clear urine was withdrawn, without, however, bringing the vesical walls in contact with the finger—*i. e.*, the bladder did not contract.

By combined recto-abdominal and recto-vesical examination it was evident that the vagina did not occupy its normal position. Also there was distinctly revealed a mass about the size of an ox-heart drawn closely back against the sacrum and lying in the median line. The upper part of this mass had a distinct central division, the lateral portions being each about the size of a hen's egg, but fusing together lower down into a single uniform globular shape.

The existence of the ovaries was also determined. Further examination was negative in its results.

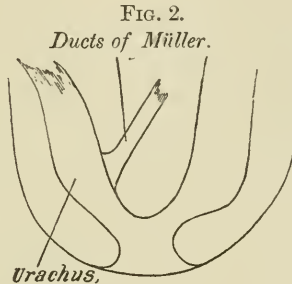
With these facts as a basis, I deemed it advisable to wait until the occurrence of the next menstrual period, that the discharge might aid in discovering the channel through which the flow escaped from the uterus to the external genitals, and so indicate the best method of operative procedure for relief. On March 24, 1891, the second day of free menstrual flow, a careful search showed that the funnel-shaped opening previously mentioned was the channel for the escape of the discharge externally. The urine drawn was perfectly clear; therefore it was a necessary inference that the opening must be anterior to the bladder, and finally a drop of blood was detected oozing through a delicately fine opening on the posterior floor of the urethra, about half an inch from the external orifice. A very fine probe was introduced into this opening, and, after passing along a canal which lay just beneath the urethral mucous membrane, entered at the depth of two inches a cavity of considerable size. Using this probe as a guide to avoid wounding the urethra, and the finger in the rectum to protect that organ, a transverse incision was made in the skin just above the sphincter ani muscle, and a canal which would admit the finger was opened up into a cavity about one and a quarter inches in diameter, globular in shape, and filled

with offensive clots and débris. The fistulous opening from the urethra also terminated in this same cavity, which was evidently the dilated lower segment of the uterus. The tissue between the rectal and urethral mucous membranes was so very thin that, having provided a means of drainage and disinfection, I thought it prudent to postpone for a time the completion of an artificial vagina, which was subsequently formed by enlarging by lateral incisions the canal made at this time. This second operation was one of considerable difficulty, owing to the free hemorrhage which followed the opening up of the tissues at the sides of the pelvis, but was controlled by a firm tampon. During this interval of rest the uterus had emptied itself completely, the cervix remaining but little larger than normal, and the condition suggested above of uterus bicornis unicollis was even more distinctly marked. After complete cicatrization of the new vaginal canal, the patient was discharged, with instructions to introduce daily a vaginal plug one and a quarter inches in diameter and two and a half inches long. To promote speedier healing and the formation of less cicatricial tissue, I should in another case try skin-grafting over the new vaginal surface. A letter received in July stated that she had experienced no difficulty in keeping the new vagina patent, that coitus now took place through it, and was attended by no pain.

Reviewing the menstrual history of the patient's earlier years, it is evident that there was at first complete obstruction to the escape of the periodical discharge until sufficient force was developed to overcome existing barriers, and then hemorrhage ensued. Latterly the patency of the opening from the uterus into the urethra being thoroughly established, menstruation occurred regularly and painlessly.

The consideration of anomalies as presented in adult life finds not the least of its interest in the possibility of tracing directly their development from variations in the normal embryological type. So I will very briefly add to the report of this case my explanation of the conditions which were here present. In the primitive stage of the embryo the genital cord is formed by four distinct structures—the Wolffian

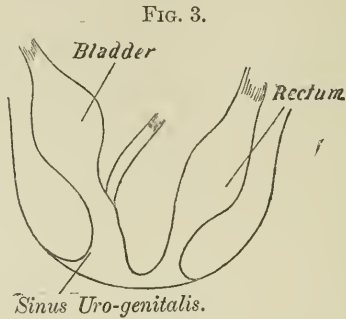
bodies and the ducts of Müller. The ducts of Müller, two in number, form by their fusion the single uterus and vagina. It is conceded that fusion takes place about the middle of the ducts, and therefore for some time the uterus exists either wholly or in part as a double organ—uterus bicornis—which, in the case above cited, persisted, as is quite common, into adult life. The fusion of the lower part of the ducts of Müller forms a canal, subsequently becoming the vagina, which terminates in a cavity of the allantois—the urachus. (Fig. 2.) The upper portion of the urachus becomes the



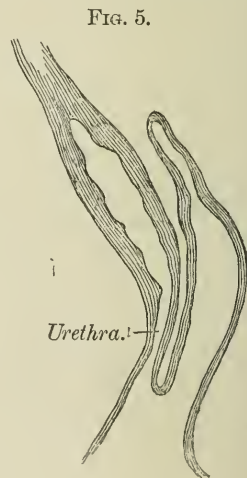
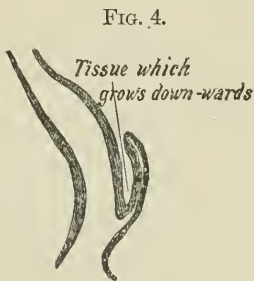
bladder. The lower part, including the point of entrance of the ducts of Müller, receives the special name of sinus urogenitalis, and, continuing downward, forms with the termination of the rectum a common cavity—the cloaca. (Fig. 2.) By the growth of new tissues, the cloaca is subdivided into two distinct cavities—the rectum posteriorly and the sinus urogenitalis anteriorly (Fig. 3), at the same time that the urachus is subdivided transversely. There now exists three distinct cavities—the bladder, the rectum, and the sinus urogenitalis. (Fig. 3.) The next subdivision to take place is by a downward growth of tissue, shutting off the urethra from the sinus urogenitalis above and anterior to the entrance of the ducts of Müller, while posteriorly the ducts of Müller persist as the vagina, and the sinus urogenitalis as the vestibule.

From this very brief *résumé* of the normal embryological

formation, it is evident that failure of complete fusion of the Müllerian ducts may lead to persistence of two distinct utero-



genital organs, either in whole or in part. In the case above reported it was limited to the body of the uterus, resulting in the not uncommon bicornate uterus with a single neck.



The second variation was more rare. Should there be arrest of development in the tissues which separate the common cavity of the urachus into three distinct ones—the bladder, the urethra, and the sinus uro-genitalis (Figs. 4

and 5)—the lower end of the ducts of Müller which form the vagina would terminate not externally, but at some point within the cavity, along its posterior surface. This was the cause of the anomalous condition presented here. Development proceeded smoothly until the urachus was subdivided into the bladder and the sinus uro-genitalis, and the cloaca into the rectum and the sinus uro-genitalis. Then the tongue of tissue, which should have been prolonged downward posteriorly to shut off the urethra, was not developed, and the sinus uro-genitalis persisted as a canal having a common opening, with the urethra externally, and through a very contracted channel with the uterus internally.

Still further corroboration of this explanation is afforded by the small amount of tissue which existed between the rectum and the genital tract. There was no development of the muscular structures forming the posterior pelvic floor, and which are always present in those variations from the normal type due to, so to speak, accidental occlusion of the vagina, as by a simple imperforate hymen.

# SALPINGITIS CONSIDERED IN ITS RELATION TO PREGNANCY AND THE PUERPERAL STATE.

By CHARLES P. NOBLE, M.D.,  
*Philadelphia.*

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THE great advance which has been made in positive knowledge concerning pelvic inflammation in women within recent years has thrown much light upon many of the problems of gynecology. The period marks a distinct epoch in the history of the science. This fact renders profitable and even essential a study of the various problems into which pelvic inflammation enters as a factor in the light of present knowledge. Many of the theories of the older pathology will derive fresh support, and others will disappear as being without foundation.

The relation of salpingitis in its various stages to sterility, pregnancy, and the puerperal state is one of the questions which demand study at this time. The classical treatises upon sterility scarcely touch upon salpingitis as a cause of the condition, and absolutely ignore the important bearing which its existence or non-existence has upon the question of treatment. The same is even more true of the relation of salpingitis to pregnancy and the puerperal state.

A study of the principal medical periodicals for the past three years and the standard works upon gynecology and obstetrics has shown very little appreciation of the bearing which modern knowledge has upon the commonly accepted theories concerning the conditions in question. These con-

siderations have induced me to review the subject and to report certain cases of salpingitis complicating pregnancy which have come under my notice.

**SALPINGITIS IN ITS RELATIONS TO STERILITY.**—It is essential to the occurrence of normal pregnancy that the spermatozoa and the ovum gain entrance to the uterine cavity. The scope of this paper excludes a consideration of those conditions which render difficult or impossible the entrance of the spermatozoa into the cavity of the uterus; but not so the second part of the problem. The importance of salpingitis in its varied forms as a cause of sterility, by preventing the ovum from entering the uterine canal, is apparent to the most superficial observer. Its importance as a cause of sterility is due to the general prevalence of the condition, and to the insurmountable obstacles to impregnation offered by the disease. The ingenuity of writers has been taxed to explain the manner in which various conditions which are accepted as causes of sterility, interfere with impregnation; but the reason why a Fallopian tube, which is occluded at its fimbriated or its uterine extremity through the processes of inflammation, or which is distended with serum, blood, or pus, or which has its lumen obliterated by one or more strictures, should prevent impregnation is at once patent. When such a condition exists in *both* Fallopian tubes sterility is the result. When the conditions are limited to one tube and otherwise the sexual organs are healthy, pregnancy is possible.

When unilateral salpingitis exists, whether the tube be simply occluded and bound down or distended with the products of the catarrh, hypersecretion from the endometrium usually takes place. The character of the discharge varies from the ordinary albuminoid discharge due to congestion of the uterus or the hemorrhagic discharge due to fungosities of the endometrium, to the purulent discharge of chronic suppurative catarrh of the uterus. The morbid condition of the endometrium and the acrid character of the secretions produced

by salpingitis, as a rule, prevent conception, even where one Fallopian tube is patent. But that pregnancy can occur during the course of unilateral salpingitis, presumably at a time when the uterus is relatively healthy, is shown by the reports of cases by myself and others. This fact is of much importance in the prognosis of sterility due to salpingitis. If it be assumed, as is not infrequently done, that because a mass can be felt on one side of the uterus having the general characteristics of an inflamed and occluded tube, that therefore the disease is bilateral and the woman permanently sterile, a grave error may be committed; and a confident prognosis of permanent sterility may be set at naught by the later occurrence of pregnancy. The same may be true when exudate is felt in both sides of the pelvis. It can readily happen that pelvic peritonitis extending over the entire pelvis has been caused by leakage of poison from *one* Fallopian tube, yet that the opposite healthy Fallopian tube may escape occlusion at its fimbriated extremity. Hence even when masses are found in both sides of the pelvis, it still behooves the physician to give a guarded prognosis with reference to sterility, lest the logic of events prove at variance with his inference. Such errors are most easily made when women are seen in the course of, or shortly after an attack of pelvic peritonitis; and are best avoided by reserving an expression of opinion until the recent inflammatory exudate has been absorbed and the real condition of the tubes and ovaries can be more accurately determined. Nevertheless it must be admitted that mistakes in prognosis, based upon the ordinary pelvic examinations, will occur even when every precaution is observed. The experienced examiner will seldom be mistaken concerning well-marked cases of tubal distention, but instances of occluded, lightly adherent, and slightly enlarged tubes will be overlooked or only suspected; and as a consequence patients will be promised too much, and be subjected to utterly useless and perhaps (under the circumstances) harmful treatment in the hope that thereby the incurable sterility may be cured. This aspect of the question



should engage the serious attention of everyone, and sterile women having a history of pelvic peritonitis, and especially having the evidence of the condition in the shape of pelvic organs fixed by adhesions, or with lessened mobility, should be promised but little, and above all should not be subjected to treatment for uterine or vaginal lesion until disease of the tubes has been positively excluded. In the near future I believe that abdominal section, at times of an exploratory nature, will be resorted to much more frequently than it has been in the past. At times the operation will be to remove a diseased appendage, under which conditions the question of sterility is secondary; and at times the operation will be for diagnosis, when the bimanual examination does not make clear, nor yet exclude, the existence of the occlusion of the tubes, when pregnancy is desired, and treatment addressed to the uterus is otherwise indicated.

The mooted question, whether it is best always to remove both uterine appendages even if one be healthy, has a direct bearing upon the treatment of women sterile from unilateral salpingitis. Unless the experience of the future demonstrates, what the experience of the past apparently indicates, that after the removal of one diseased uterine appendage the healthy one left later becomes diseased; women sterile from this cause may have their health and fertility restored by the removal of the diseased appendage. One such case has occurred in my practice. The dictum that operation for the removal of the uterine appendages should be bilateral should not be hastily accepted; and certainly the sterile woman anxious for children, having had the circumstances explained to her, should be permitted to elect whether or not the healthy appendage be removed or not.

The literature of salpingitis in its relation to sterility and pregnancy is very scanty and unsatisfactory. American and English text-books upon gynecology scarcely mention the subject, and Continental authors treat it from the pathological standpoint. Especially is it true that there is no adequate

statement concerning the bearing which the present status of the subject of pelvic inflammation has upon the management of sterile women.

*SALPINGITIS COMPLICATING PREGNANCY.*—The textbooks are singularly silent concerning salpingitis as a complication of pregnancy. It is true that pregnancy under the circumstances is not common; nevertheless it is by no means rare. Wylie states that the stretching of adhesions as the uterus enlarges gives pain, and that abortion may occur. In the cases coming under my own notice there has been very considerable pain. It is not so surprising that obstetricians should neglect this subject as that gynecologists should do so. Nevertheless I expected to find reference to it under the heading of retroflexion of the gravid uterus, but did not. Since Tyler Smith pointed out that the usual cause of retroflexion of the gravid uterus is that pregnancy occurs in retroflected uteri, attention has been drawn to this fact; and it is well known that abortion on the one hand or failure in repositing the misplaced uterus on the other, is often due to fixation of the misplaced organ. Now, as peritonitis is almost always caused by salpingitis, the relation between salpingitis and retroflexion with adhesion of the gravid uterus is at once apparent. Undoubtedly there is a field here for the investigator of the future to determine the relation of salpingitis to abortion, to retroflexion of the gravid uterus, to the vomiting of pregnancy, and to peritonitis occurring during the course of pregnancy.

I shall not discuss the etiology of ectopic gestation further than to point out that modern investigators agree that slight or catarrhal salpingitis without occlusion is the controlling factor in its causation. This fact is suggestive with reference to the proper management of this type of salpingitis.

*SALPINGITIS AS A CAUSE OF PUERPERAL PERITONITIS.*—The relation between salpingitis and puerperal peritonitis has received more attention. When the serious nature of salpingitis was first recognized by the present generation there was a

decided tendency to magnify its importance, and to deny the existence of other independent forms of inflammation. Pelvic inflammation consisted in salpingitis and peritonitis, and certain gynecologists went so far as to deny what post-mortem studies had amply proved, namely, the existence of puerperal septic cellulitis and true pelvic abscess. It was but a step for this school of men to regard all cases of puerperal peritonitis as secondary to puerperal salpingitis, and as amenable to the same treatment—the removal of the appendages, with irrigation and drainage of the peritoneum. This view of the pathology of these cases took no note of the fact that in typical cases of puerperal peritonitis the uterus, vagina, and pelvic cellular tissue are more or less infected, and that even though the peritoneum can be put in good condition by operation, the morbid condition of the uterus, vagina, pelvic connective tissue, veins, and lymphatics cannot be influenced thus—severe septic inflammation of these being often fatal. As a result of such teaching, it was gravely proposed to treat all cases of puerperal fever by abdominal section! The result of operation upon typical cases of puerperal peritonitis has been—as should have been expected—very discouraging. Cases operated on within the first week of the puerperium have been uniformly fatal.

There can be no doubt, however, that the septic inflammation at times does spread from the puerperal uterus along the tubes to the peritoneum, and cause septic salpingitis and peritonitis, without the invasion of the pelvic cellular tissue. In such cases should the peritonitis become spreading, or should pus accumulations form, undoubtedly abdominal section offers the only *reasonable* hope of saving life. But the difficulty in differentiating these cases from those in which septic parametritis is present, and in estimating the relative importance of the septic inflammation of the uterus as contrasted with that of the peritoneum, will always make the selection of cases unsatisfactory to the surgeon. Progress in the treatment of cases of acute diffuse puerperal inflammations lies in the direction of prevention. The more chronic cases, having a

history extending over some weeks, in which the inflammatory process has become localized, offer a far better field for curative operation.

Abdominal section promises most in cases of puerperal peritonitis arising from conditions present within the abdomen prior to labor. This class of cases embraces peritonitis due to the bruising or rupture of tumors, especially ovarian tumors and retention-cysts of the Fallopian tubes. The conditions present in such cases are essentially different from those present in puerperal peritonitis due to infection of the birth-canal during labor. The uterus and pelvic connective tissues are healthy, and when the tubal or ovarian tumor is removed and the peritoneum irrigated and drained, the woman is placed in condition to get well, as all diseased structures have been removed.

The relation between ovarian tumors injured during labor and puerperal peritonitis is well known, and many operations have been done for the removal of the tumor and the cure of the peritonitis under these conditions. But little has been written concerning the relation between the various tubal cysts due to salpingitis existing prior to pregnancy and puerperal peritonitis. This class of cases comes under the generic title of autogenetic puerperal fever. The name, in the light of the teaching of bacteriology, is incorrect, yet practically it is a good name, as signifying that the fever has arisen from causes residing in the woman at the beginning of labor, and not from infection introduced from without. When a tubal cyst having septic contents is injured during labor, peritonitis commonly results. If the cyst has ruptured and poured its contents into the peritoneal cavity, spreading peritonitis quickly follows. But when the cyst has been bruised only, or but a small escape of septic matter has taken place, the peritonitis is more localized. These points are illustrated in the cases reported. In this class of cases there are symptoms of peritonitis only, and there is an absence of the symptoms which accompany septic colpitis and metritis.

The lochia remains sweet and may be entirely normal in quantity. Moreover, there is the history of pelvic inflammation antedating the pregnancy, and the inflammatory mass to be outlined by bimanual examination, to guide the surgeon. Whenever the symptoms are grave, and local tenderness prevents a diagnosis, anæsthesia should be employed. Early positive diagnosis is all-important.

Abdominal section, removal of the diseased structures, irrigation, and drainage promise good results in these cases. But the indication is theoretical. No cases have been reported in which operation has been done under the conditions laid down. Operations for post-puerperal pyosalpinx and for peritonitis are on record, but in all cases the inference is strong that the disease was the result of infection of the birth-canal during labor.

The following cases illustrating the relations between salpingitis and pregnancy, labor and the puerperal state have come under my notice :

CASE I. (communicated by Dr. J. W. Millick, of Philadelphia).—Mrs. S., aged twenty-four, mother of three children, miscarried at the fourth month, and developed a salpingitis of the left tube. Under treatment the patient's condition improved. After three months a severe attack of pelvic peritonitis supervened. Convalescence from this was still imperfect when she became pregnant. At this time the enlargement of the left tube was marked. Obstinate vomiting of pregnancy greatly prostrated her, and miscarriage threatened on several occasions, but she went to full time. A healthy child was born by a breech presentation. During the labor a large fluctuating tumor was felt in the left iliac fossa, which tumor was pushed out of the way of the advancing breech. Labor was followed by a series of chills with fever, and after four months a violent diarrhœa set in, carrying off large quantities of pus. These attacks of diarrhœa, with discharge of pus, recurred every three or four weeks. Conception again occurred. During the pregnancy the attacks of diarrhœa continued for seven months, and then ceased, but septic fever was

present until term. During this time prostration was marked. Mrs. S. was delivered January 30, 1888, of a living male child without apparent accident. General peritonitis followed immediately, and she died February 7th. Post-mortem after twenty-four hours: The entire abdominal cavity was filled with fetid, greenish pus, resembling cheese. An opening was found in the colon, near the sigmoid flexure, through which the pus had escaped, per rectum, from the pyosalpinx. This becoming occluded, presumably by the curd-like pus, during the last weeks of pregnancy, accumulation had resulted and rupture had taken place during labor.

Dr. Millick remarks that the case occurred before the general acceptance of the modern teaching concerning pelvic inflammation.

CASE II. (communicated by Dr. T. D. Dunn, of West Chester, Pa.) Mrs. H. B., colored, came under my care at the birth of her second child, January, 1888. The labor and puerperium were normal. A few months later her husband contracted gonorrhœa. The family shortly after removed from West Chester, and I saw nothing more of them until January, 1890. At that time the woman was eight months pregnant, and was suffering severe pain in the right ovarian region. February 26th she was delivered of a healthy child, which developed gonorrhœal conjunctivitis on the sixth day. The labor was a natural one, and lasted but four hours. Twenty-four hours after delivery peritonitis was ushered in by a severe chill. All the symptoms of peritonitis were present in marked degree, and death resulted within forty-eight hours. Autopsy, forty-eight hours after death: The abdomen was very tympanitic. Fully one quart of seropus was found in the pelvic cavity, which was acutely inflamed. The entire peritoneum was congested, but enough plastic material had not been thrown out to agglutinate the bowels. The uterus was well contracted and normal in every respect. A rupture was found in the right Fallopian tube, the sac of which when distended was equal in size to a hen's egg. Both ovaries and the left tube were free from disease. All other organs were normal.

CASE III.—In the spring of 1890 I was called to see a mul-

tipara, aged about thirty-five, who gave a history of pelvic inflammatory attacks extending over some years; also a history of probable pregnancy of three or four months. Some weeks before she had visited a physician, representing that "she had caught cold on her monthlies," and had received local treatment. From her statement, I believe that the sound was introduced, and an intra-uterine application was made. Pelvic pain and uterine hemorrhage resulted, and, after some days, peritonitis, with obstinate vomiting. Three weeks later she came under my care. On examination I found the pelvis filled with a mass, the cervix pushed forward and upward against the pubes, great pelvic congestion and universal tenderness, the pain being most marked on the right side. Afterward, under anæsthesia, I satisfied myself that the cervix and pelvic tumor were continuous, and diagnosed pregnancy in a retroflexed and adherent uterus, complicated by salpingitis (pyosalpinx) on right side. Hoping that abortion would occur, or possibly that the adhesions would stretch and the uterus rise into the abdomen, a temporizing policy was adopted. Two months went by, and the abdomen began to enlarge, the pelvic conditions remaining the same. Careful examination failed to reveal the foetal heart-beats, or the rhythmic contractions of the pregnant uterus. The absence of the foetal heart-sounds could be explained on the supposition that the foetus was dead; in that case, however, it was difficult to understand the continued, regular growth of the mass. The absence of the intermittent contractions made the diagnosis doubtful. The case passed into other hands, and was operated upon when in a septic condition, with a diagnosis of ovarian tumor. A small, seven months', living foetus was removed. Everything was found matted together, and the patient becoming collapsed, the uterine incision was closed and nothing further attempted. She died some hours later. At the post-mortem, a tumor of the *anterior* wall of uterus was found; also a pyosalpinx on the right side. The pelvic and abdominal viscera were universally adherent. The location of the tumor explained the absence of intermittent contractions and the foetal heart-sounds. During the entire pregnancy this woman suffered very much from pain and from nausea.

CASE IV.—Mrs. K., aged about forty-four; has had nine children and several miscarriages. Thirteen years ago, after a miscarriage, she was violently ill with pelvic inflammation, which confined her to bed for two months. Within three years she had two recurrences. Her physician, Dr. J. M. Barton, writes me that the attacks were diagnosed as “pelvic cellulitis, with circumscribed peritonitis, the inflammatory deposits rising high above the pelvis.” The two recurrences were independent of pregnancy, and furnish positive proof that salpingitis was present on one side. Ten years ago, after a labor at term, pelvic inflammation again occurred, the pelvis being choked with exudate. She was confined to bed twelve weeks. At this time she was under the care of Dr. A. K. Minnich, and was seen in consultation by Dr. Goodell. The diagnosis was pelvic cellulitis. After a tedious convalescence she recovered her usual health—suffering at times pelvic discomfort, and having a number of slight attacks of pelvic inflammation, confining her to bed from a few days to a week. Within the past ten years she has had three children at term, the last being born March 15, 1891. Only in the last labor was the puerperium abnormal. Within twenty-four hours thereafter she was violently ill with pelvic peritonitis, the pain being referred to the right side, as in all previous attacks. There were chills, high fever, tympany, and vomiting. After the third day the symptoms ameliorated—anorexia, however, remaining. At the end of a week a relapse occurred, the temperature rose to 101° F., the pulse to 110, tympany and pain increased, and nausea and vomiting became marked. After twenty-four hours, I saw her in consultation. At the time she was extremely ill, with a listless expression and somewhat sunken face. Pelvic tenderness was so marked that an examination showed only pelvic exudate upon the right side. It was the opinion of the attending physician and the patient that the inflammation was spreading. The peritonitis was clearly due to bruising or rupture of a diseased tube on the right side, because of the absence of all signs of infection of the birth-canal, and of the early onset of the inflammation. In the consultation the patient's condition was considered very dangerous, but not hopeless, either without or with operation. The case was not



considered favorable for operation because of the prostration from delay. As the bowels had not been moved, it was advised that these be opened by broken doses of calomel, and by enemata of turpentine, Epsom salts, glycerin, and water, and that if improvement followed, operation should be postponed until the patient's condition improved; but that if improvement did not take place, operation would then offer the only hope of saving life, and that a slight one. The bowels were moved and the patient improved, and operation was postponed. Dr. Goodell saw Mrs. K. shortly afterward, and advised a continuance of medical treatment. She has had a tedious and somewhat interrupted convalescence, and refuses operation for the removal of the source of her trouble—a diseased right Fallopian tube.

In the *Medical News* for 1888, page 570, Dr. Blackruder, of Montreal, reports four cases of peritonitis occurring during gestation, three proving fatal. The onset in each case was sudden, the course violent, with high temperature, and death within forty-eight hours; the fourth case recovered after a long illness. No post-mortems were held, but it was considered probable that the inflammation was due to rupture of a pus tube.

In the *Annals of Gynecology* for May, 1891, in the transactions of the Philadelphia Obstetrical Society, Dr. Goodell reports three cases in which after violent pelvic peritonitis women became pregnant and were safely delivered of living children. The state of the tubes after the labor is not noted.

Similar cases, in which a diagnosis of salpingitis has been made and operation has been advised, and in which pregnancy has occurred later, are to be found mentioned in the literature. These cases show that pregnancy and labor, complicated by unilateral salpingitis, are not necessarily fatal; but they do not in the least disprove the dangers which attend pregnancy under these conditions, especially where the tubal disease is pyosalpinx. It is probable that in the cases having a favorable issue the salpingitis had not resulted in the accumulation of *septic* material within the tube.

A careful search through the principal medical journals for the past three years has revealed no other cases of puerperal peritonitis due to injury or rupture of retention-cysts of the Fallopian tubes during labor.

CONCLUSIONS.—One of the most important causes of sterility in women is salpingitis. This fact should be emphasized because of its bearing upon the management of the sterile condition. Salpingitis must be excluded in a given case before it is justifiable to treat vaginal or uterine lesions for the cure of sterility; for if salpingitis is the cause of the condition, on the one hand the treatment will be useless, and on the other it may be dangerous.

Bilateral salpingitis with occlusion is a cause of permanent sterility.

Unilateral salpingitis may or may not cause sterility. Pregnancy under the conditions is dangerous, and labor may be fatal through peritonitis. Until the diseased appendage has been removed pregnancy should be avoided.

Puerperal peritonitis due to rupture of retention-cysts of the Fallopian tubes is analogous to the same condition when caused by the injury of ovarian tumors. Prompt abdominal section, removal of the diseased structures, irrigation, and drainage promise good results in these cases; because—the uterus and broad ligaments being healthy—the septic focus is thereby removed.

## SLOUGHING FIBROIDS OF THE UTERUS.

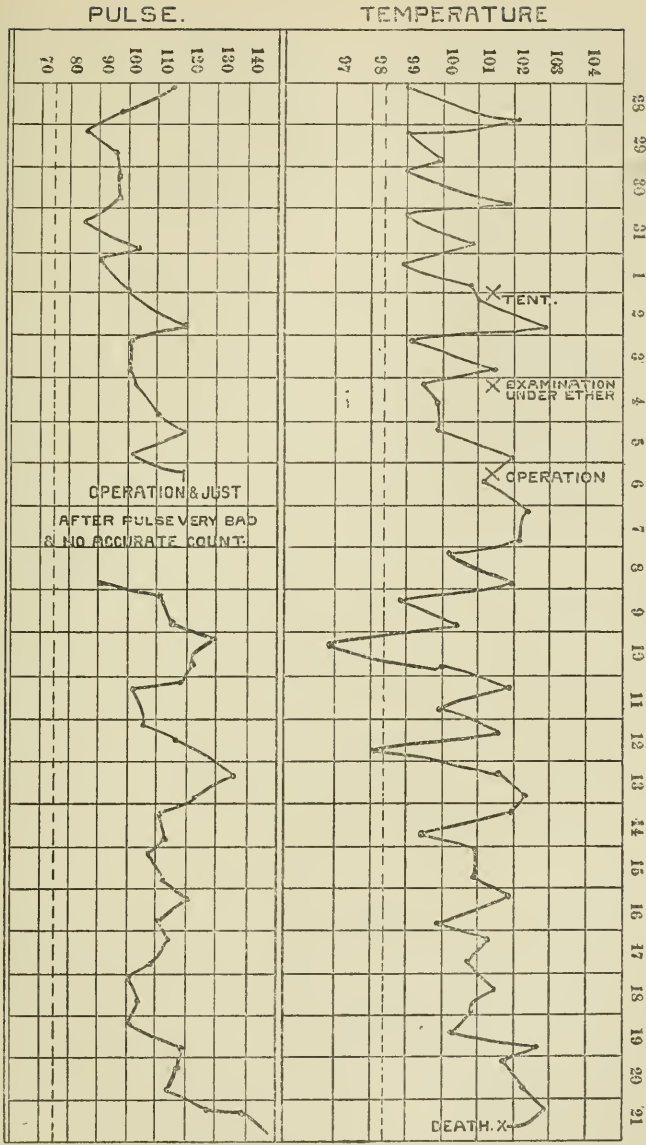
BY P. H. INGALLS,  
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THE following case of sloughing fibroid of the uterus, operated on by me, and having a fatal termination, will form the basis of a brief paper on the above subject :

The patient, a widow of temperate habits, thirty-nine years of age, housekeeper by occupation, was admitted into my service in the Hartford Hospital, in the latter part of January of the present year. She had had two children, the youngest sixteen years of age, and several miscarriages since the birth of her children, the last one occurring about two years before her admission to the hospital. She could herself assign no cause for the frequent miscarriages. Her general health was poor ; she had frequent attacks of stomach and intestinal disturbance, menstruated too frequently and too freely, attended with some pain, and had been told by some physician, a few years previous, that she had a tumor, since which time she had had no treatment—in fact, had not sought medical advice. At the time of her admission she was having her regular period, so examination was delayed until that should cease. At this time she had a rather high temperature, with quite a marked rise every other day ; had a badly coated tongue, with a tendency to vomit, and thinking that she had some malaria, quinine was prescribed, but with little or no effect. As soon as her period was finished I attempted an examination, but was unable to pass my finger through the os, yet could plainly map out a uterus enlarged to the size of a four months' pregnancy. I inserted a tupelo tent as large as I could force through the os, and postponed the examination until

the following day, when, under ether, I was able to pass my finger within the os, where I felt a structure the like of which do not remember to have felt before in the uterine cavity. There was no tumor of distinct shape and outline to be felt, but the entire cavity of the uterus was filled by a mass—rough, corrugated, stringy, breaking down, and giving out a foul-smelling discharge. I could not make out its character at all, and thought at first that I had to deal with a case of malignant disease of the body of the uterus. I removed a piece of the tissue to submit to the microscopist and desisted from any further work at that time. After learning from him that the tissue was myo-fibroma, and that he could obtain no evidence of malignancy, I concluded that I had a case of broken-down sloughing fibroid in the uterine cavity which called for prompt removal. I ordered the patient thoroughly douched twice daily with 1 : 3000 bichloride solution, and gave twenty drops of ergot every four hours to see if I could not force the tumor out into a pediculated mass. For two days I thought I was going to succeed, for I had caused a mass to come down into and completely fill the vagina, but the patient began to have such unmistakable signs of septic absorption that I did not dare to wait any longer for this process, so determined to operate at once. The patient was etherized and put in the lithotomy position. I then attempted to drag the mass down so as to get behind and around it with the chain of an *écraseur*, but I was forced to abandon this mode of procedure for this reason. The tissue had degenerated to such an extent that it was very friable, and the volsella and all other forceps which I had as hand would not hold themselves in the tumor sufficiently to give me any power over it, so that I was obliged to proceed to remove it piecemeal. I then grasped as large sections of the growth as I could with a pair of lithotomy forceps, and removed them with the spoon saw. In this manner I very soon had taken away the bulk of the mass which was filling the vagina, and could get a better idea of the extent of the attachment of the growth, when I found that it extended from just within the os up the entire left side of the uterus, across the fundus, and was attached by its entire surface. Taking a wire *écraseur*, and throwing the wire loop around the bulk of the



mass, and tightening it so as to give me some control of the tumor, I used Thomas's spoon-saw and removed nearly all the remainder of the growth. Quite a number of large shreds were left hanging from the fundus, and taking up each one of these separately, and using my fingers for a guide, so as not to cut away uterine tissues, I used the curved scissors and took them away close up to the fundus, then finished the operation by going over the entire surface with a sharp curette. During the operation, which lasted one hour and a half, constant irrigation was kept up with a 1 : 5000 bichloride solution. The cavity of the uterus was left quite clean with the exception of a few small shreds of tissue, which I could not get at with the scissors, and which I could not get away with the curette, as it would slip over them without bringing them away. The patient had lost very little blood, but was suffering from shock, and was in quite a weak and bad condition. She was quickly removed to the bed, hot bottles packed about her and stimulant hypodermics administered. For four hours, it was expected that she would succumb to the shock of the operation, but at that point she began to rally. The stomach continued troublesome and never seemed to regain its action. She was able to take stimulants in small quantities, but for nourishment rectal alimentation had to be resorted to. Drainage was good. The discharge was sufficiently copious, yet always of unpleasant odor, and antiseptic intra-uterine irrigation at regular intervals was kept up. In spite of all our use of antiseptics there was evidently a mild form of sepsis going on all the time, and the temperature kept up, except one sudden drop, as will be noted from the appended diagram.

Six days after the operation the first slough came away. It was not a large one, and was evidently one of the shreds which I could not get with curette or scissors. There was a gradual decline in the condition of the patient till the seventeenth day, when she died from septicæmia.

Owing to the peculiar laws of Connecticut regarding post-mortem examinations no autopsy could be obtained.

I may be pardoned for going somewhat at length into the history of such an unfavorable case, but it seems to me that

it is just these cases which set the surgeon to thinking and determining what he would do again in similar cases, and a careful review of the ground gone over may show him the weak points in his treatment of the case, and point out the way to obtain more satisfactory results in future work.

Therefore I determined to make an honest review of this case, and see if I could satisfy myself that my procedure had been a proper one.

I have operated for the removal of fibroid tumors *per vaginam* twelve times; two of the cases have been sloughing fibroids, and in one case I found the tumor loose in the vagina, having been expelled spontaneously, and this is the first unfavorable result I have ever had to report. In all my work the only unpleasant complication I have ever had arise was a smart attack of general peritonitis on the third day after an operation, which yielded quickly to the saline, open-bowel treatment and the free use of stimulants.

I have been unable to find, in the scanty literature at my command, very much which throws any light on the subject of sloughing fibroids of the uterus. I believe it is generally accepted that these tumors exist at the start as simple myofibromata, and are either interstitial or submucous. In all probability, the various forms of subperitoneal growths we meet with have started as interstitial tumors, and the uterine contractions set up by reflex action caused by their presence have forced them toward the point of least resistance, so that often they are found existing as simple pediculated masses hanging to the peritoneal surface of the uterus by a small attachment. If, on the other hand, they are situated nearer the mucous lining, the same forcing power of the uterine structure becomes exerted upon them, and taking their covering to form an envelope or capsule, they are forced into the cavity of the uterus either as a sessile or pediculated growth. This latter form is the one with which I have most often met, and have so far never had any difficulty in removing—my ordinary method of procedure being to stretch the cervix,

drag down the tumor, and, when possible, get behind the growth with the *écraseur*; and, if difficulties offer themselves in using this instrument, I have always resorted to the spoon saw. It is these cases, also, that have furnished those peculiar examples of spontaneous expulsion.

It is, of course, largely a matter of theory as to just how this condition of things is brought about. It is generally accepted, I think, that, in the majority of cases, it is purely mechanical work. The presence of the foreign mass in the uterus sets up violent contractions of that organ until the tumor is forced out of the uterus, and the pedicle may be actually wrenched off by the force of these contractions; the tumor then will be found loose in the vagina, and cases are on record where it has even been actually expelled without the vagina. In this process, also, sloughing to a greater or less extent takes place as soon as the force exerted upon the growth begins to deprive it of its nourishment; the pedicle being the smaller body, sloughs off first, setting the tumor free. This was the case in one of my patients, where I found a broken-down tumor lying perfectly free in the vagina, and simply had to drag it out and wash out the cavity of the cervix, the patient presenting no unpleasant symptoms whatever.

In the sessile, as well as in the interstitial form of fibroid growths it is often exceedingly difficult to determine just what causes them to take on the sloughing process. These tumors may exist as interstitial growths for years, and give rise to no particular symptoms, except some increase in the size of the uterus and probably some menorrhagia. Not infrequently it is advisable to let them alone as long as they remain in this passive state. I think it is generally believed by pathologists that these growths derive their nourishment from their capsules, and so long as they do not become affected by uterine contractions—either set up by the irritation caused by their presence, or some other cause, like child-bearing or miscarriage—they can maintain their vitality and integrity and do no great harm. It is only when some condition of affairs



obtains which interferes with their proper nourishment, that gangrene may set in. Any damage to the integrity of the capsule may cause sloughing.

It is not an uncommon occurrence to dilate the uterus either with steel dilators or some form of tent, in order to make an examination and diagnosis of trouble inside the uterus. This means is most likely to wound the capsule of a fibroid tumor, and gangrene of the mass can easily ensue. Again, any change in the circulation of the capsule, thrombosis or pressure on the vessels, may so disturb the vitality of the envelope as to cause a point of breaking down and ulceration in the capsule; then the growth, being cut off from its proper blood-supply, would naturally mortify and slough, sending off masses of sloughing tissue and opening dangerous avenues for septic absorption. I believe there are many cases which pass on to a fatal termination from this cause where there has been no surgical interference whatever.

To return now to the case narrated at the beginning of this paper. Several years before I saw this patient she had had a diagnosis of tumor made by some physician; the particulars of this diagnosis I do not know, nor did my patient; I only know that she was advised to let the tumor alone and wait for the menopause, which, it was hoped, would bring her relief. From this statement I take it for granted that whoever saw her at that time made a diagnosis of interstitial fibroid tumor, which, in all probability, was in a passive state, and advised no interference, hoping that the menopause would bring atrophy of both uterus and tumor, and from that point she would have no further trouble, as is so often the case.

Now as to a point upon which it is only possible to speculate. When did the capsule of this tumor break down, and what caused it? She presents a history of previous examination and of several miscarriages. I cannot think the previous examination caused it, for that was made several years before I saw her, and had the integrity of the capsule been disturbed at that time we should have had our manifestations of trouble

at an earlier period. I am inclined to believe that each miscarriage exerted some deleterious influence on the capsule of this tumor, each succeeding one weakening it more and more, until it broke through and a small point of ulceration started, which gradually spread and allowed the interstitial tumor to work its way through; and, as the ulcerative process in the capsule spread more and more, just so much was the tumor deprived of nourishment and the gangrene ensued. My use of the tent, of course, had nothing to do with it, as the case was too far advanced when it came into my hands.

A point now arises in regard to operative procedure in these cases. It is the custom with some operators, in cases of interstitial fibroids, to dilate the cavity of the uterus and thoroughly divide the capsule, and then, with ergot, force the tumor down so as to get a pedicle, and thus have it in a shape easy of removal. I believe, in cases of interstitial growths which are making trouble, either from hemorrhage or pressure, and where the capsule is thin and accessible, it is proper surgery; but in passive growths I should certainly await developments.

In my operation, did I lose valuable time in the two days I spent in forcing the growth down by the use of ergot? I think not, for I do not believe I could have gotten away anywhere near as much of the mass if I had attempted its removal in the shape in which I first found it.

I firmly believe the patient had septicæmia before I touched her at all, and that the case was a forlorn hope from the start. I regret that any consideration of possible malaria caused me to delay and prevented my recognizing the septic poisoning at the onset; but I did not know what I had in the uterus, and waited for the completion of the menstrual period before starting any investigation.

## SOME UNUSUAL CASES IN ABDOMINAL SURGERY.

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IN the rapid progress which has been made in abdominal surgery during the last decade, the point has been reached where a recital of the details of the usual run of abdominal operations has ceased to be either instructive or interesting. The *technique* of ovariectomy, of oöphorectomy, of salpingo-oöphorectomy, and of the other ordinary abdominal operations has settled down upon an established basis, minor variations in the hands of individual surgeons relating principally to details of secondary importance and depending upon the early training or the acquired habit of the operator. The manner of treating the pedicle, of separating adhesions, of controlling hemorrhage, of draining the abdominal cavity, of closing and dressing the abdominal wound, and of combating the various unfavorable conditions which may arise in the course of the after-treatment, has been definitely settled by the accumulated experience of a multitude of operators. Beyond these points there is but little that can be considered essential, and every operator may with propriety be a law unto himself in reference to lesser details.

Yet to every abdominal surgeon, whether his experience be large or small, cases will now and then present themselves which are a wide departure from the average type—cases in which that which happens is the unexpected, for which he finds no precedent to guide him in his own experience or in that of others, and whose successful treatment will depend

largely upon his appreciation of general principles and upon his own native ingenuity and fertility of resource. Our knowledge of the proper treatment of such cases may some day be as complete and certain as that of the more frequently recurring conditions. But it certainly is not so at the present time, and it can be thus definitely established only by the recorded observation of individual cases. It is for the purpose of making an humble contribution in this direction that the following cases are here reported.

CASE I. *Sarcoma of right ovary; ovariectomy; recovery.*—P. W., aged fifty-four years, widow, multipara. Menopause occurred six years ago. Has always had good health until April, 1889, when she noticed a lump in the right side which gradually increased in size. About two months later she noticed a general enlargement of the whole abdomen, which increased up to the time when she came under my observation in January, 1890. She had no pain at any time, her only inconvenience arising from the size of the accumulation in the abdominal cavity, which interfered with respiration and prevented her from lying down or walking about with any comfort. Her general health was not seriously impaired, although she had lost flesh.

When first seen by me her abdomen was as large as that of a woman at the full term of pregnancy. External examination showed the abdominal cavity to be filled with ascitic fluid. In the right inguinal region could be felt a hard tumor, very movable, floating in the fluid and giving to the hand a very marked sensation of *ballotement*. Its attachment was evidently on the right side, as it could not be pushed beyond the median line. The tumor could also be felt from the vagina, but its attachment could not be made out. Diagnosis: solid tumor floating in ascitic fluid, the nature of the tumor not determined.

*Operation, January 20, 1890.* Present: Drs. Kendrick and Harris and the class of students of the Atlanta Medical College. The abdomen was opened in the median line and a quantity of ascitic fluid evacuated—estimated at three gallons. The tumor, which was free from adhesions, was lifted out of the abdomen. It was attached to the right broad ligament by a slender pedicle

consisting of the normal attachments of the ovary. The pedicle was transfixed and tied with silk. The abdomen was sponged out and about a pint of gelatinous material removed. No drainage. The abdominal incision was closed and dressed in the usual manner. The patient made a rapid recovery, although her temperature rose to  $103.4^{\circ}$  on the evening of the second day. She returned to her home completely cured on the 15th of February, and up to the present time (June, 1891), there has been no recurrence of the disease.

The tumor was oval in shape and had a smooth, white surface. On section it was found to be perfectly solid and closely resembled in appearance a fibroid tumor of the uterus. It weighed three and one-half pounds. At the point where the pedicle was divided on its lower side could be seen the remains of the ovary from whose surface the tumor appeared to grow. A microscopical examination was made by Dr. M. B. Hutchins, of Atlanta, who has kindly furnished me the following report: "I have examined sections both from frozen and from hardened portions of the specimen which you left with me. The disease is sarcoma, and the tumor is made up of both small round and small spindle cells. Bloodvessels are quite numerous in the round-celled portions, while I could see none among the spindle cells, which were more closely packed together."

Solid tumors of the ovary are rare. Greig-Smith says: "Of all tumors of the ovary, probably not more than 3 per cent. are solid."<sup>1</sup> Of two hundred and eighty-two consecutive ovariectomies reported by Homans, only three were for solid tumors of the ovary.<sup>2</sup> Of two hundred and seven unselected ovariectomies collected from various operators by the *Pittsburg Medical Review*, only seven were for growths of this variety.<sup>3</sup> Of one hundred and one consecutive ovariectomies reported by Tait, only two were for solid tumors.<sup>4</sup>

<sup>1</sup> Abdominal Surgery, Amer. ed., p. 155.

<sup>2</sup> Three Hundred and Eighty-four Laparotomies for Various Diseases. Boston, 1887.

<sup>3</sup> Four Hundred and Twenty-two Recent Abdominal Sections. Pittsburg, 1888.

<sup>4</sup> Diseases of the Ovaries, Amer. ed., 1883, p. 319.

In regard to the pathology of these tumors some confusion seems to exist, since the line of distinction has not been clearly drawn between fibroma, myoma, and sarcoma of the ovary, the symptoms and gross appearance of which are identical. Howell explains this uncertainty in the following words: "In discussing the structural elements of the ovary, we have already referred to the numerous spindle-shaped cells which enter so largely into the composition of the stroma, the other and chief component being a fine connective tissue. One group of distinguished and competent histologists regard these cells as organic muscular fibres, His even assuming that the whole of the stroma represents merely the hyperplastic *tunica medie* of the arteries, the adventitial layer of connective tissue being entirely wanting in the vessels of this organ. Others, again, affirm that the spindle-cells represent connective tissue in its immature form. Between these normal tissues of the ovary and the histological constituents of the fibromata a close resemblance frequently exists, though from the changeable nature of the latter the connection is not always so evident. The intercellular or ground substance of the tumor varies in amount, density, and arrangement, while the cells may be few or abundant. It is the presence of these very connective-tissue spindle-cells, however, which has frequently caused a true fibrous growth of the ovary to be regarded as a sarcoma, fibro-sarcoma, or cysto-sarcoma." He further says: "The pure round-celled variety of sarcoma attacks the ovary, though very rarely. Besides this and the spindle-celled sarcoma are found mixed cell-growths composed of both forms in varying proportions."<sup>1</sup>

From this quotation it is evident that the presence of round and spindle-cells in solid ovarian tumors has not the same significance as regards malignancy as when found in neoplasms of other parts of the body. This view is corroborated by the

<sup>1</sup> American System of Gynecology, vol. ii. pp. 1037 and 1046.

fact that such ovarian tumors exhibit no tendency to recurrence after their removal by laparotomy.

CASE II. *Superficial papilloma of both ovaries; ovariectomy; recovery; subsequent recurrence, and death.*—M. P., aged sixty-two years, married, multipara. Menopause occurred at about forty-five years of age. Health has always been good. In November, 1889, she first noticed a general enlargement of her abdomen. This enlargement increased with great rapidity, so that when she came under my care, early in March, she was larger than a woman at full term of pregnancy, and was unable to stand up or lie down, but could only sit propped up in bed. She had no pain beyond the inconvenience arising from the bulk of the abdominal accumulation, and, strange to say, her general health had not suffered apparently.

External examination showed the abdomen to be filled with ascitic fluid. No tumor could be felt through the abdominal walls. By vaginal examination an obscure mass could be made out in the pelvis, on each side of the uterus. Careful investigation failed to elicit any evidence of cardiac, renal, or hepatic disease. There was no œdema of any part of the body. The urine was normal. No diagnosis was made. As the symptoms pointed to some diseased condition within the abdomen, it was decided to make an exploratory incision.

*Operation, March 15, 1890.* Present: Drs. Harris, Murphey, and Kennedy. The abdomen was opened in the median line and a large quantity of ascitic fluid evacuated. Upon exploring the cavity the surface of both ovaries was found to be completely covered with dendritic papillomatous growths identical in appearance with cauliflower cancer of the cervix. The left ovary contained a cyst as large as an English walnut, entirely independent of the papilloma. There was no papillomatous growth within or upon the cyst. The right ovary was as large as a goose-egg, while the left was as large as a man's fist. The disease was confined entirely to the ovaries, and there were no adhesions to neighboring organs. The peritoneum was normal as far as it was visible during the operation. Both ovaries were removed, the abdomen washed out and closed without drainage. The patient made a good recovery, her highest temperature being 100.2°,

on the evening of the first day. On the 25th of April there was a reaccumulation of ascitic fluid in the abdomen to such an extent as to necessitate tapping and to render it obvious that there was recurrence of the disease within the pelvis. She returned to her home at the North about the middle of May, and died on the 31st of July following.

The following statement of the microscopic appearance of the growths was kindly furnished me by Dr. M. B. Hutchins, of Atlanta: "Sections from frozen specimen were stained in borax-carmin solution. Sections were through the thickness of the ovary and the growth upon its side. The growth begins in the otherwise normal ovarian tissue, appearing first among the characteristic elements of the ovary. We first see, lying in the connective tissue or between its bands, tubules or groups of tubules resembling those belonging to normal glands. These are formed of several layers of polygonal cells for the most part, or we see here and there a tubule formed of a single layer of columnar cells. As the slide is moved so as to bring the papillomatous-looking part of the section under the objective, we see that the connective tissue and follicles continue for a little distance, but the latter finally disappear as we reach the true papillomatous structure. In the latter situation we still find tubular and also variously sized and shaped small cysts, or solid cell formations resembling in structure, and in their subdivision by bands of connective tissue into lobules, a racemose gland. The latter portion seems to differ from the tubular portion in that it rises directly from a band of ovarian connective tissue and is solid. The tubular parts gradually pass from the ovarian structure as above described, the Graafian follicles disappearing, and the appearance remains of bands of connective tissue, tubular growths, some dilated and appearing to contain semi-degenerated cells and the numerous irregular cysts above mentioned. The cysts have no well-marked cell-lining. One side may show a smooth border of connective tissue, while others show the new cell growth, irregular and here and there projecting in papillomatous form into the cavity. (This would seem to indicate that the cysts resulted from cell-degeneration *en masse* as it were.) The growth seems to be covered with the normal ovarian envelope, and this proves intra-



ovarian origin. Some of the Graafian follicles appear dilated. There is some evidence of inflammation throughout the specimen. Capillary vessels were not perceptible in the new growth."

The symptoms as well as the gross and microscopic appearance of the ovaries in this case correspond essentially with Olshausen's description of superficial papilloma of the ovary, of which he states that he has been able to find only six recorded cases.<sup>1</sup> Such papillomatous growths are quite often found in the interior of a certain variety of ovarian cysts, but their occurrence upon the free surface of the ovary is one of the rarest of pathological conditions. In addition to the six cases collected by Olshausen, Mundé<sup>2</sup> and Cushing<sup>3</sup> have each reported a single case. Dr. Henry C. Coe, pathologist to the New York State Woman's Hospital, informs me in a personal communication that he has seen two cases. Sanger also states that he has seen two cases.<sup>4</sup> It is evident, therefore, that the disease is an exceedingly rare one.

There is some difference of opinion in regard to the malignancy of this affection. Sanger says: "It may be considered as a sub-form of cancerous development." Freund also classes it with malignant growths.<sup>5</sup> Tait, on the other hand, believes that there are two varieties of papilloma, one malignant, the other benign, undistinguishable by their gross appearance.<sup>6</sup> In most of the reported cases the patient recovered from the operation, but subsequently died from recurrence of the disease.

In all cases of solid tumor of the ovary, ascites forms a constant feature in the clinical history. An important deduction from this fact is the necessity for an exploratory incision in those cases of ascites in which disease of the heart, liver,

<sup>1</sup> Cycl. of Obst. and Gyn., vol. viii. p. 61.

<sup>2</sup> Amer. Journal of Obst., January, 1888, p. 36.

<sup>3</sup> Annals of Gynecology, September, 1888, p. 589.

<sup>4</sup> Path. and Ther. of Dis. of Women, p. 500. Boston, 1888.

<sup>5</sup> Zeitschr. f. Geb. u. Gyn., Band xvii. Heft 1.

<sup>6</sup> Diseases of the Ovaries, Amer. ed., p. 147.

and kidneys can be excluded. This view is rapidly gaining ground among the profession, and Tait says unequivocally that an exploratory incision is preferable to tapping in any case of ascites and involves less danger to the patient. In the second case which I have reported, a diagnosis was impossible without opening the abdomen. By the operation the patient was relieved of her most troublesome symptom and her life was undoubtedly prolonged.

CASE III. *Obstruction of the cystic duct by an impacted gall-stone; cholecystotomy; recovery.*—The patient, a woman, twenty-eight years of age, the mother of five children, had always been well until about seven years ago, when she began to suffer with attacks of "bilious colic." In the intervals between the attacks her health was good. About five years ago she first noticed a lump in the right side below the ribs, which gradually increased in size up to the present time. Her general health began to fail about four years ago, and weakness and emaciation increased, until she was confined to the bed nearly all the time. The appetite remained fair, the bowels were constipated. There was no jaundice at any time. She had no pain except during the paroxysms of colic. On examination an elastic, fluctuating tumor could be felt on the right side, commencing at the lower border of the liver and extending obliquely downward and to the left as far as the umbilicus. It was apparently about five inches long and about two inches broad. The lower extremity could be pushed upward and to the left in a circle, of which the upper extremity of the tumor was the axis. It was tender to the touch. It was apparently attached to the liver by its upper extremity. A diagnosis was made of distention of the gall-bladder from obstruction, and it was decided to perform cholecystotomy with a view to its relief.

*Operation, June 7, 1890.* Present: Drs. Rosser, Gwinn, and Gibson. An incision was made in the median line, extending two inches above the navel and one inch below it. The distended gall-bladder at once came into view and was found to be entirely free from adhesions. It was punctured with a trocar and a half-pint of clear serum evacuated. The opening was then enlarged

with scissors and a finger introduced, which came into contact with a mass of gall-stones, which were removed to the number of thirty-eight. The finger was then passed down to the orifice of the cystic duct, and a stone found lying impacted in the duct with a firm constriction between it and the gall-bladder. This stone could not be removed by manipulation, and therefore a bistoury was passed down to the constriction and its edges slightly nicked at various points. By further effort the stone was then dislodged and removed through the gall-bladder. Exploration of the cystic duct showed that no other obstruction was present. Exploration of the common duct was not considered necessary in view of the absence of jaundice. The incision in the gall-bladder was closed by a continued Lembert suture of catgut and dropped back into the abdomen. The incision in the abdominal wall was closed and dressed in the usual manner. The patient made a good recovery without a single unfavorable symptom. Her highest temperature was  $100.5^{\circ}$  on the evening of the second day and fell to normal on the fourth day. There has been no recurrence of the disease and no more attacks of bilious colic. The patient has remained in perfect health up to the present time (June, 1891).

During the past five years the experience of a considerable number of operators has pretty thoroughly established the indications for and the *technique* of cholecystotomy and placed the operation upon a settled basis. When a positive diagnosis of distention of the gall-bladder can be made, the case is now universally regarded as properly falling within the domain of surgery. About eighty cholecystotomies have been reported, of which number Tait has performed fifty-five, with only three deaths.<sup>1</sup> On account of his large experience and successful results, very few operators have ventured to depart from the rules formulated by him for the performance of the operation. He advises that in all cases in which the gall-bladder is opened, the edges of the sac should be stitched to the edges of the abdominal incision, so that a biliary fistula

<sup>1</sup> Edinburgh Medical Journal, October and November, 1889.

is established, in preference to closing the sac and dropping it back into the abdominal cavity. As soon as the free flow of bile into the duodenum is established the fistula is to be allowed to heal, which it readily does. The reason for this plan lies in the difficulty of determining at the time of operation that permeability of the ducts has been completely and permanently established, and the facility and safety with which subsequent surgical interference may be undertaken through the fistula when necessary. But when the conditions are as clear and as simple as in the case reported above, when the sole pathological feature is obstruction of the cystic duct by an impacted calculus, whose removal leaves that duct demonstrably pervious, and when the permeability of the common duct is conclusively shown by the entire absence of jaundice, the operation may with perfect safety be greatly simplified by closing the gall-bladder and dropping it back into the abdomen. The safety of this method under such circumstances is demonstrated by similar cases reported by Bobbs,<sup>1</sup> Meredith,<sup>2</sup> Bernays,<sup>3</sup> Carmalt,<sup>4</sup> and Sklifosovsky.<sup>5</sup> It is true that Meredith's patient died, but the autopsy showed that death resulted from renal disease, and not from any cause connected with the operation. Perfect adhesion of the incision in the gall-bladder had taken place and the ducts were quite unobstructed throughout. There can be no doubt, however, that in the presence of complications the mode of procedure advocated by Tait is to be preferred.

The views enunciated by Gaston upon this point are so clear and rational that they are worthy of reproduction in this connection. He says: "A decision as to the merits of these different modes of proceeding depends upon the feasibility of establishing a communication with the duodenum, as

<sup>1</sup> Trans. Indiana State Med. Soc., 1868.

<sup>2</sup> British Med. Journal, February 23, 1885.

<sup>3</sup> St. Louis Weekly Med. Review, October 14, 1885.

<sup>4</sup> Proceedings Amer. Surg. Assoc., May 8, 1886.

<sup>5</sup> Reported from Vratich, No. 27, 1890, in *Annals of Surgery*, February, 1891.

complete occlusion of that outlet of the gall-bladder is held to be good and sufficient reason for establishing a fistulous opening externally. There may exist a temporary obstruction in the cystic or common duct, which, being removed, leaves the track free for the flow of bile; and exploration has, in some instances, demonstrated the permeability of the ducts after evacuating the gall-bladder, so that an external outlet is not requisite. Under such favorable conditions, the practicability of effecting a closure of the incision in the gall-bladder separate from the external incision is to be considered. Should the dilatation of the sac have been considerable, the cavity is not likely to refill with bile or mucous secretion before adhesive inflammation occurs throughout the line of suture, and hence no distention should ensue prior to the complete union of the incision.”<sup>1</sup>

CASE IV. *Pregnancy complicated by uterine myoma; myotomy at four months; recovery; delivery at full term.*—L. A., married, aged twenty-six years. Has always had robust health. In April, 1890, became pregnant for the first time. In the following August she began to suffer severe uterine pains accompanied by slight hemorrhages from the womb. These symptoms led her to seek medical advice. When first seen by me, September 18, 1890, she presented the usual symptoms of pregnancy at four months. But by external palpation the enlarged womb could be felt to be pushed over into the left iliac region, while the right iliac region was occupied by a round, immovable tumor, apparently separate from the womb. By bimanual examination it was found that the tumor lay between the womb and the pelvic wall, that it was solid and attached to the womb by a thick pedicle. A diagnosis was made of a pedunculated sub-peritoneal fibroid attached to the right side of the uterus and impacted between the uterus and the pelvic wall. As the symptoms indicated a threatened miscarriage and as the patient was exceedingly anxious that the child should be saved, it was decided to remove the tumor by laparotomy.

<sup>1</sup> Reference Handbook of the Med. Sci., vol. ii. p. 126.

*Operation, September 25, 1890.* Present: Drs. Harris and Kennedy. The abdomen was opened in the median line. Examination by the hand in the cavity confirmed the diagnosis. The tumor, which was of the size of an orange, was found to be free from adhesions, and by the exercise of a considerable degree of force was dislodged from the pelvis and brought up into the abdominal incision. It was found to be attached to the right side of the uterus by a pedicle as large as a man's wrist. The pedicle was tied in three portions by interlocking silk ligatures which effectually controlled hemorrhage, and after being divided was dropped back into the abdomen. The abdomen was closed in the usual manner. The patient made an uninterrupted recovery, her temperature at no time reaching 100°. Without further symptoms of miscarriage she went on to the full term of her pregnancy, and on the 10th of March, 1891, was safely delivered by me of a living female child weighing 10½ pounds. The uterine contractions were normal in character. The child presented by the breech, and after labor had continued for thirteen hours was extracted by a fillet passed around the anterior groin. To prevent the occurrence of ventral hernia from the tension produced by the increasing size of the womb, the patient was instructed to wear a firm abdominal binder from the time of the operation until her delivery. Fortunately this accident did not occur.

There are few recorded cases of myomotomy during pregnancy. The tendency of uterine fibromata is to induce sterility. If pregnancy occurs, abortion frequently results. But in some cases the tumor rises with the uterus out of the pelvis and symptoms caused by pressure do not occur. When the tumor springs from the side of the womb, and lies between it and the pelvic wall, the uterus may be subjected to such pressure as to produce serious trouble and to call for active interference. In such cases it was formerly considered necessary to induce abortion. But as a result of the development of abdominal surgery a number of operators have attempted the removal of the tumor by laparotomy. Gusserow has collected ten such cases.<sup>1</sup> My researches have not enabled

<sup>1</sup> *Cycl. of Obst. and Gyn.*, vol. ix. p. 307.

me to add to this number. Of these ten, recovery followed in seven, while three died. Of the seven who recovered, only one aborted. Therefore, counting both mothers and children, thirteen lives were saved out of a possible twenty. If abortion had been induced and all the patients had recovered, only ten lives would have been saved out of a possible twenty. If we agree with Lusk,<sup>1</sup> that "artificial abortion is justifiable when it offers the *only* hope of saving the life of the mother," the success which has attended the operation of myomotomy during pregnancy renders the induction of abortion under such circumstances no longer justifiable. Charpentier states that it is sub-peritoneal fibroids with long pedicles that are most apt to diminish the chances of pregnancy going on to term.<sup>2</sup> Fortunately it is this variety which is most amenable to treatment by laparotomy and removal. Another point to which Gusserow calls attention as bearing upon the question is, that "the induction of abortion, apart from its inherent dangers, does not rid the patients of their tumors."<sup>3</sup> Hence the same difficulty is liable to recur with each succeeding pregnancy, in addition to other dangers to which the patient is exposed from the presence of the tumor. From all these considerations a rational conclusion appears to be, that in cases like the one reported above, where active interference has become necessary, removal of the tumor by laparotomy is the operation to be preferred as best subserving the conjoint interests of mother and child.

CASE V. *Prolapse of the uterus ; hysterorrhaphy ; recovery.*—C. M., married, aged thirty-eight years. Mother of nine children. Since the birth of her eighth child has suffered from uterine prolapse, the organ gradually descending until for the past year, since her last labor, it has projected entirely through the vulvar orifice, causing a great deal of local irritation and disabling her from the performance of her domestic duties. Various forms of pessaries have been used without any benefit. Her general

<sup>1</sup> Science and Art of Midwifery, p. 351.

<sup>2</sup> Cycl. of Obst. and Gyn., vol. iii. p. 174.

<sup>3</sup> Loc. cit.

health has gradually declined. Menstruation has been regular and painless. On examination the cervix uteri was found projecting from the vulva about an inch. Its extremity was excoriated and bled freely when touched. The organ was easily replaced with the patient in the horizontal position, but owing to the great relaxation of the vaginal walls and the absence of the perineum, which had been torn to the sphincter ani, the prolapse returned as soon as she stood upon her feet. There were no indications of any present or past inflammatory disease within the pelvis.

*Operation, February 3, 1891.* Present: Drs. Kennedy, Childs, Burton, and Smith. The abdomen was opened in the median line. The womb was pushed up by the fingers of an assistant in the vagina, and the fundus readily brought to the abdominal incision. The intestines were carefully cleared away from between it and the abdominal wall. A needle armed with a carbonized catgut ligature was passed through the abdominal wall about an inch to the left of the lower angle of the incision, then through the left horn of the uterus above the entrance of the Fallopian tube, and then out through the abdominal wall at a point about an inch above the point of entrance. The same procedure was repeated on the right side. The fundus uteri was scarified with the point of a scalpel over the portion of its surface which was to rest against the abdominal wall in order to cause a free exudation of lymph. The abdominal incision was then closed in the usual manner with silk ligatures, and the projecting ends of the catgut ligatures were tied together across the line of incision with sufficient tension to bring the fundus uteri into apposition with the abdominal wall. The patient made an uneventful recovery. The exposed ends of the catgut ligatures came away on the eleventh day. At the end of three weeks she was allowed to sit up and the womb was found to be firmly attached to the abdominal wall. At the end of five weeks she was allowed to return to her home, a distance of over two hundred miles. Up to the present time (June, 1891), there has been no return of the prolapse. Menstruation has been normal. Patient has recovered her general health and does all the work for a family of eleven persons without discomfort.



# TUBAL AND PERITONEAL TUBERCULOSIS, WITH SPECIAL REFERENCE TO DIAGNOSIS.

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THE following remarks upon the diagnosis of one of the obscurer affections with which the gynecologist is liable to be confronted are based upon the personal experience, limited as it is, of the writer. In attempting to reach a diagnosis, he has found the teachings of the text-books to be of little value as a guide. But close observation of cases both before, at the time of, and after laparotomy has served to evolve a combination of symptoms, mainly of an objective character, which, when found coexisting, point with considerable clearness to the existence of peritoneal tuberculosis, either alone, or combined as the primary or secondary affection with tuberculosis of the tubes.

For the purposes of this paper the writer has utilized only those cases which he has personally studied with a view to their symptomatology, and in which the diagnosis of peritoneal or tubal tuberculosis, or both, was subsequently verified either by laparotomy or by exploratory puncture. These cases number eight—all of them occurring in females. Of these, one was proven by exploratory puncture, the remaining seven by laparotomy. All of the cases occurred in the writer's own practice, except one of the cases proven by laparotomy, which was seen with Dr. Florian Krug. The writer would take this occasion to express his obligations to his friend Dr. Krug

for his kindness in permitting the use of this case for the purposes of this paper.

In addition to the cases forming the basis of this paper, the writer has made or witnessed autopsies on five or six cases of peritoneal tuberculosis, and in perhaps the same number of cases has witnessed the performance of laparotomy by various abdominal surgeons. In none of the cases coming to autopsy, including one which the writer himself had treated, was peritoneal tuberculosis diagnosed, or suspected, before death, and no history or examination of any value for the purposes of this paper was recorded. Of the cases which were subjected to abdominal section by surgeons other than the writer, and in which the writer had the privilege of witnessing the operation, the majority proved surprises to the operator; in but one was the diagnosis positively made and in a second strongly suspected. But inasmuch as the writer had no opportunity to examine any of these cases before operation, they have not formed part of his personal experience in the diagnosis of tubercular salpingitis and peritonitis, and are therefore excluded from consideration. For obvious reasons, also, are excluded a few cases in which the writer has ventured the diagnosis of peritoneal tuberculosis, but in which laparotomy was declined by the patient.

Of the six cases in which the writer performed laparotomy, two were twice subjected to the operation. In the one case the second laparotomy was performed for the removal of a sero-purulent intra-peritoneal exudate formed after the first laparotomy and for ventro-fixation of a prolapsed uterus; in the other for removal of a double tubercular pyosalpinx, the enucleation of which the writer had not the courage to attempt at the first operation.

The object of this paper is not to deal exhaustively with the subject of the symptomatology of peritoneal and tubal tuberculosis, nor to review the literature, ancient and modern, of the theme; but rather to dwell upon those points which in the

writer's individual experience have seemed to be of practical aid in reaching a diagnosis.

Dr. William Osler, in a recent most valuable contribution ("Tubercular Peritonitis," *The Johns Hopkins Hospital Reports*, vol. ii. No. 2, 1890), has entered into a very exhaustive clinical and analytical study of the subject, and has dwelt, with delightful fulness, upon the symptomatology and diagnosis. The recent appearance and the completeness of this classical treatise renders a second elaborate disquisition superfluous at the present time. I shall take the liberty of making free use of Dr. Osler's work in the following pages for a comparison of observations.

Dr. Osler classes all cases of tuberculosis as occurring in the peritoneum under one of three anatomical forms:

1. Acute miliary tuberculosis.
2. Chronic caseous and ulcerating tuberculosis.
3. Chronic fibro-tuberculosis.

For the purposes of clinical study, especially in so far as it concerns diagnosis, I consider the classification of peritonéal tuberculosis into two forms sufficient:

1. Tuberculosis with ascites, free or encapsulated.
2. Tuberculosis without ascites, or with ascites so small in amount as to be inappreciable by the ordinary physical signs.

I will begin with a consideration of the symptoms and signs common to both forms, and afterward attempt to point out the features peculiar to each.

The *family history* is probably more often found pointing to tubercular disease than has happened in my eight cases, in three of which it was found good, in three indifferent or fair, and in only two bad.

The *tuberculous habitus* has been well marked in all but two of my cases. The condition known as "clubbed fingers," bulbous enlargement of the ends of the fingers with incurvation of the nails, was common, although my notes fail to throw light upon the exact frequency of this condition.

One feature, however, not mentioned by Osler, existed in a marked degree in all of my cases—a pronounced and very striking *expression of apathy and listlessness*. This corresponded with a marked indolence of the cardiac and respiratory movements except when passingly accelerated by increased pyrexia.

One of my patients was sixty-four years of age, the other seven were between twenty and thirty.

Two of my patients developed a notable appetite after laparotomy, although both finally succumbed to general tuberculosis.

Osler lays great stress upon the diagnostic value of *involvement of the pleura and pericardium*. All of my patients were carefully examined before operation as to the condition of the heart and lungs. In but one case were the latter found involved, a tubercular infiltration, without loss of pulmonary substance, being discovered in the apex of the right lung. In all the other cases, and with the exception mentioned in this one also, the lungs, pleura, heart, and pericardium were found normal as far as physical signs go. One can readily understand, however, that cases with involvement of the circulatory and respiratory organs would be more likely to come under the care of the specialist in internal medicine than of the gynecologist. In none of my patients—not even the one with tubercular infiltration of one apex—was *cough* a symptom.

All of my patients, with the exception of one in whom the temperature was normal, had persistent *mild pyrexia*. The *subnormal temperature* alluded to by Osler was not found.

In one of the cases a deep brown *discoloration of the entire integument* developed during the course of the disease. The others all maintained remarkably clear and delicate complexions.

*Tympanites* was a feature of one case only, and in that one case it developed after laparotomy. An enormous amount of

ascitic fluid was evacuated at the operation. The abdomen, however, remained large, although the fluid never reaccumulated, its place being filled by the distended intestines, as denoted by the percussion note.

The first symptom pretty uniformly (six out of eight cases) complained of by the patients was *pain and distress in the lower part of the abdomen*. The only two patients who did not complain of this symptom were the two in whom the peritoneum alone was involved. The pain seems therefore to be fairly attributable to the tubercular affection of the tubes.

*Enlargement of the spleen*, as determined by percussion, was observed in four of the eight cases. In three of the remainder no note was made of the condition of the spleen; in the eighth case it was found of normal size.

Judged from my limited experience, enlargement of the spleen, taken in connection with other symptoms, would appear to be a sign of some importance in diagnosis. It is not mentioned as such by Osler.

TUBERCULOSIS OF TUBES AND PERITONEUM WITHOUT ASCITES.—The diagnosis of peritoneal tuberculosis, in the absence of ascites, is based mainly upon the detection of localized, irregular thickenings—*tubercular tumors*—in various parts of the abdominal cavity. These tumors are caused by thickened, rolled up omentum, agglutinated intestines, enlarged mesenteric glands, etc. Their existence presupposes a tolerably well advanced stage of the disease, and they are consequently rarely available for an early diagnosis.

The writer desires to call especial attention to one sign which has proved to him of the greatest value in the early diagnosis of peritoneal tuberculosis without ascites, and which he has thus far failed to find mentioned by any author. It has been the sign which led him to a correct diagnosis in all the early cases in which he has been able to make a positive diagnosis before laparotomy. It consists in *plaque-like, localized thickenings of the deeper portion of the abdominal parietes*, perceptible to *gentle touch*. They impart to the palpating fin

gers the sensation as if the peritoneal surface of the abdominal walls were occupied by urticaria wheals or pomphi, of various sizes. The author has met them from one up to eight centimetres in diameter. They may be quite numerous in a given case, or but two or three may be found scattered over the anterior and lateral walls of the abdominal cavity. By marking their site before laparotomy and carefully examining during the performance of the operation the structures underlying the marks, the writer has satisfied himself that this sign—the plaque-like, localized thickenings—depends for its existence upon a localized hyperæmia and swelling of the tissues of the abdominal wall immediately underlying the peritoneum—*i. e.*, of the sub-peritoneal connective tissue. The peritoneum was frequently found unchanged and not the seat of tubercular deposit at the precise spot where the induration had been felt. Indeed the sign may be especially well marked in cases where the peritoneal tuberculosis is in its very incipiency, a few solitary tubercles being found scattered here and there in the peritoneal sac. This was notably the case in Dr. Krug's patient (Case VII.), in whom the peritoneal tuberculosis was difficult to recognize at the operation, owing to the paucity of tubercles. When the tubercular peritonitis has led to universal and uniform thickening of the entire peritoneum, the sign becomes less available for diagnosis. I consider it, therefore, of especial value in the diagnosis of the very early stages of peritoneal tuberculosis, and when it can be plainly made out in parts of the abdominal walls not overlying a solid viscus, I regard it as almost, if not quite, pathognomonic. The only other disease in which, to my mind, it might occur, is disseminated secondary carcinosis of the peritoneum. Inasmuch, however, as in the latter instance it could occur only toward the end of the disease, while in peritoneal tuberculosis it is an early manifestation, the differential diagnosis ought rarely to present any difficulty.

Our knowledge of the differential diagnosis of tubal tuberculosis from other diseases of the tubes leading to enlargement

is as yet very meagre. Hegar has advanced the statement that in tuberculosis of the tubes the uterine end of the tube is more likely to be the principal seat of enlargement than in other diseases affecting the tubes, and thinks this fact may be made available for diagnosis. The writer's limited experience has not been that of Hegar; he has invariably found the outer half of the tube principally affected and enlarged by the disease.

Osler offers us more valuable aid in the following sentence: "The association of a tubal tumor with an ill-defined, anomalous mass (tubercular tumor) in the abdominal cavity should arouse suspicion at once."

I would go a step further and respectfully submit the following proposition: *The coëxistence of tubal tumor or tumors with plaque-like thickenings of the sub-peritoneal tissues, above described, points with great positiveness to tuberculosis. The tuberculosis, under these conditions, may fairly be assumed to be primary in the tube or tubes, if no other deep-seated tumors can be palpated in the abdominal cavity.*

Exploratory puncture of the tubal tumor may, in exceptional instances, make positive the diagnosis of tubal tuberculosis, as in Case VIII., in which it demonstrated the existence of pyosalpinx, and examination of the pus withdrawn from the tube proved the presence of the bacillus tuberculosis. This is, as far as known to the writer, the first and only recorded case in which an absolutely unquestionable diagnosis of tubercular pyosalpinx was made *intra vitam* without laparotomy. In two other cases in which exploratory punctures secured pus from the tubes, and which were on subsequent laparotomy proven to be cases of tubal and peritoneal tuberculosis, no tubercle bacilli could be found in the pus. The method of exploratory puncture employed was that described by the writer as "abdominal puncture guided by combined vaginal and rectal touch."<sup>1</sup>

<sup>1</sup> "Exploratory Puncture of the Female Pelvic Organs: A Diagnostic Study," Medical Record, November 22, 1890.

PERITONEAL TUBERCULOSIS WITH ASCITES I consider more difficult of diagnosis: In the first place, because large accumulations of fluid in the abdominal cavity render palpation of the tubes difficult, and thus prevent our obtaining the evidence to be derived from recognizable enlargement of the latter. Secondly, because with the abdomen distended it becomes more difficult to be sure of the presence or otherwise of tubercular tumors or of the plaque-like thickenings of the sub-peritoneal tissues.

Peritoneal tuberculosis with ascites has been most commonly mistaken for ovarian cystoma. From non-adherent ovarian cystoma it may be differentiated by the irregular and indistinct outlines of the ascitic tumor, the intestinal percussion note here and there overlapping and encroaching upon the area of dulness. In adherent ovarian cystoma this distinguishing mark becomes lost, and the diagnosis becomes exceedingly difficult, perhaps impossible. The difficulty is increased in the rare cases in which the two neoplastic formations, ovarian tumor and peritoneal tuberculosis with ascites coexist, as in Case III.

Exploratory puncture and microscopical examination of the ascitic fluid has been made by me in two cases with considerable, and in one with moderate, ascites—the fluid in all three cases being examined, with negative results, for the presence of tubercle bacilli. In all three cases subsequent laparotomy showed peritoneal tuberculosis.

In five of the eight cases herewith reported, the diagnosis of tubal and peritoneal tuberculosis, singly or combined, was made previous to operation; in a sixth, a probable diagnosis only was reached. In the two remaining cases the correct diagnosis was not reached until after opening the abdomen; one case, previous to operation, being mistaken for ovarian cystoma, the other for gonorrhoeal pyosalpinx.

However difficult the diagnosis may be before operation, it can generally be readily made on the operating-table while working down to the peritoncum and before the latter is



opened. The vascularity of the abdominal wall is greatly increased, often requiring ligature of a considerable number of vessels. Especially is this the case in the thickened sub-peritoneal tissues. The occurrence of this excessive vascularity should always arouse a very strong suspicion of peritoneal tuberculosis. The brisk hemorrhages from the abdominal wound and on the separation of adhesions, coupled with the already far advanced anæmia of the patient, have been the chief reasons which have often deterred operators from an attempt to remove the tubes when the tuberculosis was evidently primary in the latter.

In five of the eight cases here reported, the tubal tuberculosis was the primary affection, the coexisting peritoneal tuberculosis, present in all five, being secondary. In three of the five cases of primary tubal tuberculosis there was pyosalpinx; double in two cases, unilateral in one. In the two remaining cases of primary tubal tuberculosis no pus was found in the tubes.

Peritoneal tuberculosis existed as the primary affection in three cases; in one of these the tubes were secondarily involved; in the remaining two they were found normal.

Seven of the eight cases came under observation at periods varying between six and twelve weeks after the beginning of the disease, the average duration having been eight weeks. One case was six months advanced at the time of operation.

CASE I. *Tuberculosis of tubes and peritoneum.*—R. S., aged twenty years; single; admitted to St. Francis' Hospital July 8, 1889. Father and three sisters living; mother and one brother died of consumption. Patient dates her illness from April, 1889. Pains in lower part of abdomen the chief complaint; no cough, and but little cachexia or emaciation.

Examination shows on either side of the normal uterus an irregularly enlarged tube, averaging about  $1\frac{1}{2}$  cm. in diameter. Exploratory puncture of both tubes, with negative results. No ascites. Physical examination of heart and lungs negative. Slight pyrexia, with remissions.

Laparotomy not at first entertained. While under observation the tubal tumors very rapidly increased in size, until they were nearly 4 cm. in diameter; corresponding increase in pains and fever. Rapidly filling double pyosalpinx diagnosed—without a second exploration by puncture—and rupture feared. Operation now advised; tuberculosis not suspected.

*Laparotomy, July 24, 1889.* Entire peritoneum studded with tubercles, most of which were miliary in appearance; others undergoing caseous degeneration. Tubes greatly thickened, enlarged to 4 cm. in diameter, and completely covered with tubercles; no ascites. The free hemorrhage and the extensive adhesions deterred me from an attempt at removal of the tubes. Abdomen closed without further interference, after removal of a small piece of peritoneum for microscopical examination. The latter demonstrated the presence of the bacillus tuberculosis.

Two months after operation the patient developed cough for the first time in her life. Acute miliary tuberculosis of the lungs supervened and led to the death of the patient on December 8th, four and a half months after operation. The abdominal wound closed by primary union, but toward the end of life reopened and discharged a thin purulent secretion.

CASE II. *Acute miliary tuberculosis of peritoneum.*—A. G., aged thirty years; married; mother of seven children; came under my care April 28, 1890. Family history indifferent; formerly suffered from some uterine displacement, for which she wore a pessary. Present illness dates from February, 1890. It began with stabbing pains in right groin, which soon became general all over the abdomen. These pains have kept her in bed for two months past. Appearance that of a person greatly run down in health; anæmic, emaciated, listless, and cachectic. Mild pyrexia.

Abdomen tumid, irregular in outline. Tympanitic resonance on percussion everywhere except low down in right flank.

Uterus normal in size and position; mobility impaired. In region of right tube an elongated induration, about 5 cm. long, can be felt; left tube enlarged to about half this size. Douglas's pouch is boggy to feel. Two or three enlarged sacral glands are found in the hollow of sacrum behind rectum. Spleen consider-

ably enlarged and very hard; can be distinctly felt reaching downward to 5 cm. below the costal margin. At various parts of the abdomen a few small nodular masses can be felt behind the thin abdominal walls and moving with them. Exploratory puncture of tubes negative. Puncture into retro-uterine space on two occasions gave yellowish serum. Although especially examined for their presence, no bacilli of tuberculosis were found in this fluid. The exploratory puncture, however, revealed the presence of ascitic fluid in the peritoneum before it had accumulated in sufficient quantities to be detected by other signs. The discovery of this fluid, coupled with the general symptoms and the nodular indurations of the parietal peritoneum, led to the diagnosis of tuberculosis of the tubes and peritoneum.

*Laparotomy, May 24, 1890.* About 1½ litres of ascitic fluid. Peritoneum thickened and studded with recent and older miliary tubercles. Tubes and ovaries, thickened and studded with tubercles, were curled up to the side of and behind the uterus. Their size and feel did not impress me with the idea that the tuberculosis was primary in the appendages. Removal of the latter was, therefore, not attempted. About one-half the amount of ascitic fluid was removed by sponging, and the abdomen closed without further interference and without drainage. Convalescence was uneventful; the wound healed by primary union, and the patient was discharged June 18, 1890.

I saw nothing of her until ten months after operation. She then presented herself at my office, and stated that, with the exception of pain at her periods, which are regular but profuse, she considers herself a well woman. She has done the work of a large household ever since leaving the hospital.

Examination shows the tubes of same size as at time of operation; distinct thickening in the region of the ileo-cæcal valve. No other localized thickenings and no ascites. Patient has changed so greatly for the better in appearance and has gained so much flesh that I failed to recognize her.

CASE III. *Acute miliary tuberculosis of peritoneum; cystadenoma of both ovaries.*—M. B., aged sixty-four years; married; mother of four children; came under my care September 28, 1890. Menstruation began at sixteen years of age, and ended at fifty-

five years of age. One brother died of phthisis; with this exception her family history is good.

Her present illness dated from April, 1890, and began with pains in abdomen around and below umbilicus and with vomiting. The abdominal pains and vomiting continued until June, when patient first noticed beginning enlargement of the abdomen. Appetite poor; bowels constipated; pains in back and sides.

On her entrance into the hospital the patient was placed in the medical division, her extreme feebleness seeming to indicate a moribund condition.

On my first examination, October 8, 1890, I found the abdomen enlarged to about the size of an eight months' gestation; circumference at umbilicus, 94 cm. Distinct fluctuation could be had across the abdomen from any point to almost any other. Dulness on percussion over entire left half of abdomen from loins to 4 cm. beyond the median line in front. Right half of abdomen resonant on percussion, except in supra-pubic region. No distinct, well-defined outlines of the fluid collection could be made out by palpation. On exploratory puncture a slightly viscid, yellowish-green fluid was obtained. As a cystic tumor of the kidney or hydronephrosis was among the possibilities, this fluid was examined, with negative results, for urinary constituents. Lungs presented nothing abnormal.

Uterus normal in position and size. No fluid in Douglas's sac, which was found occupied by two small, hard bodies.

*Probable diagnosis.* Ovarian cystoma of left side. Tuberculosis not suspected.

Patient's general condition exceedingly poor. Pulse intermittent, every third pulsation being lost.

*Laparotomy, October 11, 1890.* Ether. The incision, 10 cm. long, led directly into the cavity containing the fluid. The walls of this cavity were composed of thickened peritoneum thickly studded, on both its parietal and visceral surfaces, with miliary tubercles. The viscid, greenish-yellow fluid weighed 7100 grammes. Floating about in the fluid near the bottom were found two ovarian tumors anchored one to either broad ligament. The larger, on the right side, formed a lobulated oval, 13 by 7 cm., containing colloid, very viscid fluid. The tumor on the left was

a reproduction, on a smaller scale, of that on the right; it measured 5 by 6 cm. Tubes normal; both tubes and ovaries tied off and removed. After removal of the fluid the tuberculous peritoneal cavity was washed out with a 1 : 5000 sublimate solution, the latter in turn being removed by flushing with sterilized water. After sponging dry the peritoneal cavity, the abdomen was closed without drainage.

Patient began to improve immediately after operation; especially was this noticeable in regard to the pulse. Convalescence afebrile and without complications. Sutures removed on ninth day; primary union. Patient discharged November 10th, feeling perfectly well and without any fluid in abdomen. I have been unable to ascertain her further progress.

Dr. Eugene Hodenpyl kindly examined the removed ovarian tumors. He reported them as typical examples of cystadenoma of the papillary variety. No trace of tubercular formation entered into their structure.

CASE IV. *Chronic tuberculosis of peritoneum; complete prolapsus of uterus.*—D. M., aged twenty-four years; single; was sent to me by her family physician, Dr. A. Shannon, with an abdominal enlargement and complete procidentia uteri. Family history good; menstruation began at fourteen years of age, and has continued regularly, five or six days every four weeks, until the present, she being unwell at the time I first saw her, February 16, 1891.

Five years ago the uterus began to come out through the vulva. At first the patient could replace it at night; latterly it has been out of her body day and night. For the past two months has noticed an abdominal enlargement. Bowels regular; mild pyrexia; never any cough.

Physical examination of lungs gave a slight dulness on percussion at either apex, anteriorly and posteriorly, with high-pitched inspiration and prolonged expiration. Rude vesicular respiration over balance of both lungs. Spleen decidedly enlarged. Owing to entire absence of cough and sputa, no examination of the latter for tubercle bacilli could be made.

Abdomen symmetrically distended by an accumulation of fluid to size of a seven months' gestation. Circumference at

umbilicus 80 cm.; pubis to umbilicus 20 cm.; umbilicus to sternum 17 cm. Fluctuation well marked. Dulness on percussion from 5 cm. above the umbilicus down to pubis, the limits of the dulness extending laterally 10 to 12 cm. from the median line on either side. Resonance in both flanks. The outlines of the tumor ill-defined, shading off gradually into surrounding viscera. Complete procidentia of vagina and uterus; vaginal outlet greatly distended. The fluid accumulation was readily palpated from the vagina after replacing the uterus.

At the first examination a diagnosis of ovarian cystoma was made; at the second examination, two days later, this diagnosis was abandoned and that of tubercular peritonitis was substituted.

*Laparotomy, February 20th*, in the presence of Drs. T. G. Thomas and Clement Cleveland. Ether. Incision 5 cm. long. Peritoneum found greatly thickened in line of incision. On opening it about five litres of deep-yellowish-tinted fluid of slightly viscid consistency escaped. The interior of the peritoneal sac felt roughened. The intestine forming the upper wall of the cavity could not be brought down to incision for inspection. Diagnosis of tubercular peritonitis made from the appearance of the peritoneum near incision, a piece of which was cut out for microscopical examination. Ovaries and tubes not greatly changed, the serous covering of these organs appearing merely to participate in the general tubercular thickening of the peritoneum. The tubercular cavity was washed out with 1:5000 sublimate solution; this in turn displaced by sterilized water. The prolapsed uterus was now returned into the body and ventrofixated by scraping raw the anterior aspect of the fundus and attaching it by three deep sutures to the lower end of the abdominal wound. The relaxed perineal outlet was closed by perineorrhaphy. The exact time required for these various operative procedures was fifty-five minutes.

The excised piece of peritoneum was pronounced by Dr. E. Hodenpyl, after microscopical examination, to be typical tubercular tissue.

A pulmonary hemorrhage occurred a week after operation, followed by the development of cough. Perineal wound healed by primary union.

The fluid in the peritoneum reaccumulated, slowly undergoing a purulent degeneration, reopening the lower end of abdominal wound after having first detached the uterine adhesions by lifting the anterior abdominal wall away from the fundus.

*Second laparotomy, March 19, 1891.* The abdominal wound was reopened and the peritoneum freed from the now purulent fluid by thorough washing. An opening made into the vagina from Douglas's sac, and through drainage, by double rubber tube, established from abdominal wound to vagina. Uterus again brought up, the fundus denuded, and a second time sewed to the anterior abdominal wall.

The patient recovered from the operation. Acute pulmonary tuberculosis, however, carried her off on April 10th, seven weeks after the first and three weeks after the second laparotomy.

*CASE V. Double tubercular pyosalpinx; miliary tuberculosis of peritoneum.*—K. G., aged twenty years, single, chambermaid. Father died at thirty-five of stomach trouble; mother alive and well. Has two sisters, one of whom has a cough and is considered delicate; the other enjoys good health.

*April 15, 1891.* With the exception of a temporary vesical disturbance four years since, patient enjoyed excellent health until about six weeks ago. At that time her feet began to swell, and she had attacks of dizziness and faintness. A week or two later pains developed in lower part of abdomen which have increased to date. Flatulence, aggravating these pains, is greatly complained of. Patient has never had a cough. She is anæmic and delicate in appearance, but not to an extreme degree. Slight pyrexia. No albuminuria.

On examination the uterus is found imbedded and immobilized by a mass on either side and behind. The diameter of the mass to the left is estimated at 15 cm., of that to the right at 10 cm. Nothing definite can be palpated in the mass on the right. In the left mass and in Douglas's sac the contours of an enlarged, greatly thickened tube can be plainly discerned. Exploratory puncture of this tube gives four grammes of pus. Spleen moderately enlarged. Abdomen perfectly flat; no ascites. Physical examination of heart and lungs reveals nothing abnormal.

The diagnosis narrowed down to either tubercular or gonorrhœal pyosalpinx. Patient denies ever having exposed herself to the danger of gonorrhœa, and there seemed to be no reason to doubt her statement. A careful examination of the pus was made by Dr. Hodenpyl, who failed to find either gonococci or tubercle bacilli.

*Laparotomy, April 21, 1891.* Incision 7 to 8 cm. long. Very vascular abdominal walls, a large number of vessels requiring ligature. Omentum and intestines adherent to anterior abdominal walls and to pelvic viscera. Peritoneum contains about 100 grammes of yellowish serum.

A large tubal sac bulges high up on the left side, reaching the anterior abdominal wall; a second smaller pus tube (the right) is found behind the uterus. Intestines, omentum, tubes and parietal peritoneum everywhere quite thickly studded with miliary tubercles; the tubal tuberculosis evidently primary. A piece of peritoneum exsected for pathological examination. Enuclation of the tubes seemed a rather formidable undertaking in view of the excessive hemorrhage following the slightest separation of adhesions. Sixty grammes of pus were drawn out of left tube by the aspirator, and the abdomen closed without washing and without drainage. Duration of operation, twenty-seven minutes.

Sutures removed eight days later, when primary union was found to have occurred.

The operation produced no change in the patient's condition, except that the pelvic pains were less complained of. The mild pyrexia continued, and the feebleness and emaciation progressed in spite of a greatly improved appetite. Toward the fourth week a deposit of tubercle formed in the lower part of the scar of the abdominal wound.

The pelvic conditions remained unchanged, and still regarding the tubal tuberculosis as the primary affection, I offered to attempt the removal of the diseased tubes by a second operation. The proposition was accepted, and a second laparotomy was performed on May 21, 1891.

The incision was carried through the old scar, being extended a little above and below. The tubercular infiltration of the



scar, miliary and yellow, was exsected. The abdominal and pelvic organs were found in much the same condition as at the first operation, except that the peritoneum was more reddened and vascular, and more thickly studded with miliary tubercles. The entire right tube was enucleated from behind the uterus and removed with its ovary. It measured 2.5 to 3 cm. in diameter in its external two-thirds and contained 5 grammes of pus. One-half of the left tube was enucleated from a large tubercular mass and tied off; as much of this mass as possible was removed and hemorrhage was controlled by ligature of both ovarian and uterine arteries. After free flushing of the peritoneal cavity, partly with 1 : 5000 sublimate solution, the abdominal cavity was closed without drainage.

Microscopical examination demonstrated the pyosalpinx to be tubercular in character on either side.

Patient's general condition improved after the second operation; the appetite continued good; the pyrexia and extreme weakness gradually disappeared. A small fecal fistula formed in the abdominal wound in the third week, which still persisted on June 30th, the date of her leaving the hospital.

CASE VI. *Tubercular pyosalpinx of left side; miliary tuberculosis of peritoneum.*—E. W., aged twenty-three years, a widow. Family history good. During the past three years has had two attacks of acute articular rheumatism. Menstruation of irregular type and scanty, but without pain. Has had two children and one miscarriage—being pregnant the last time five years ago.

Her present illness began two months ago. Pains in the back and both sides and one painful menstruation have been the only symptoms. No cough. Mild pyrexia.

*Examination, May 15, 1891.* Patient small of stature, fairly well nourished, lungs and heart normal. Abdomen not enlarged; no ascites. Uterus normal in size and position. Above, behind, and to the left of the uterus a small mass, 5 to 6 cm. in diameter, can be felt; one-third of it is very hard, the balance very soft. Exploratory puncture of the soft portion yielded pus. This pus was examined for gonococci and tubercle bacilli, but neither were found. Appendages on the right side feel normal. No induration of any kind can be palpated in other parts of the abdomen.

*Diagnosis.* Left pyosalpinx with adhesions of intestine and omentum.

*Laparotomy, May 19, 1891.* Incision 10 cm. long. Tissues of abdominal wall are very vascular and bleed freely, especially the subperitoneal fat. From this fact the diagnosis of tuberculosis of the peritoneum was made at this stage before opening the cavity. Peritoneum found thickened to extent of 3 to 4 mm. Omentum greatly thickened, adherent to pelvic walls and viscera. Tied off below, cut across and reflected upward. A little yellowish serum escaped from abdominal cavity. The thickened peritoneum was studded here and there with fresh miliary tubercles. A considerable quantity of gelatinous material was found adherent to the peritoneal walls and also contained in small cavities formed by peritoneal adhesions. Uterus about the only organ with an approximately normal looking peritoneum.

Left tube thickened in its outer two-thirds to a diameter of 2 to 2½ cm., lengthened, tortuous, and containing about 30 grammes of pus. Left ovary normal. Left appendages removed without rupture of the pyosalpinx. The very free hemorrhage caused by separating adhesions stopped after ligature of the broad ligament.

Right tube and ovary appear normal except that they are studded with numerous miliary tubercles. Tied off and removed.

Peritoneal irrigation. Iodoform-gauze packing to control hemorrhage. Recovery without incident.

Patient began to gain flesh and strength immediately and left hospital, looking and feeling perfectly well, five weeks after operation.

CASE VII. *Tuberculosis of tubes and peritoneum.*—The history of this case has been kindly placed at my disposal by my friend, Dr. Florian Krug.

M. S., aged twenty-three years, married, with a family history of tuberculosis, was taken ill in October, 1890, with pains in the lower part of the abdomen and on urination and defecation. Leucorrhœa for the past three weeks. Periods regular. Urine contains a little albumin and some blood corpuscles.

I saw the patient on the invitation of Dr. Krug on December

19, 1890. We found the uterus crowded to the left by a soft, semi-fluctuating mass situated to its right. Two or three small, flattened, plaque-like indurations, corresponding in depth to the internal aspect of the abdominal wall, could be felt at various parts of the abdomen. A diagnosis of peritoneal tuberculosis and probable tubal tuberculosis was made.

Dr. Krug performed laparotomy on the following day. He found a tubal tumor of the right side, which he removed, and incipient acute miliary tuberculosis of the peritoneum. Abdomen closed without drainage. Patient made a good recovery, and at last accounts remained well.

Examination of the removed tube demonstrated the presence of tuberculosis.

CASE VIII. *Tubercular pyosalpinx; tuberculosis of peritoneum; syphilitic stricture of rectum.*—N. W., aged twenty-four years, married, nullipara. Family history good as far as regards tuberculosis. Contracted syphilis from her husband soon after her marriage at eighteen. Has been very constipated ever since she can remember; for the past three years the formed motions have been ribbon-shaped and of small calibre.

Present illness dates back two months, at which time she noticed a sensitive lump in each inguinal region, that on the left side being especially tender. Constant pain and night-sweats soon reduced her to a condition of extreme cachexia and emaciation. No cough. No leucorrhœa. Mild pyrexia.

*Examination, January 14, 1891.* A tight syphilitic stricture of the rectum, barely admitting the tip of the index finger, is found at a distance of 4 cm. from the anus. Descending colon filled with fecal matter. Vagina and cervix normal. Uterus normal in size and direction but crowded against the pubis by an indurated mass behind and to its right and left. An enlarged tube on either side can be made out as the nucleus of the pathological mass which fills the pelvic inlet. Right tube larger and softer than the left. Exploratory puncture of the right tube yields pus. The presence of ascites is also demonstrated by the withdrawal of serous fluid from the abdominal cavity. Slight thickenings of the internal aspect of the abdominal walls can be felt at various parts. Spleen slightly enlarged. Lungs and heart normal.

The pus removed by exploratory puncture was kindly examined by Dr. Eugene Hodenpyl, who reported that he found two tubercle bacilli on a single slide.

On account of the almost moribund condition of the patient and the profound syphilitic cachexia, operation was not urged and the patient left the hospital.

**SUMMARY.**—There seems to be a difference in the clinical features of cases of peritoneal and tubal tuberculosis as they present themselves to the general practitioner and to the gynecologist. The latter is more likely to see cases in which the disease is limited to the abdominal and pelvic cavities.

For purposes of clinical study peritoneal tuberculosis may be classified as tuberculosis with, and tuberculosis without, ascites.

In both forms of the disease the family history, habitus, age, and expression of the patient, as well as the condition of the skin, lungs, pleura, and pericardium should be taken into consideration in attempting to reach a diagnosis. The symptoms, however, which have been more uniform in the writer's experience are pelvic pain and distress, mild and irregular pyrexia, and enlargement of the spleen.

There is nothing characteristic about tubal tuberculosis to distinguish it on bimanual palpation from other tumors of the tube. The diagnosis may, however, in a certain proportion of cases, be made by exploratory puncture of the tube and examination of any fluid obtained for tubercle bacilli. A diagnosis thus made is, of course, unquestionable.

In dry tubercular peritonitis the plaque-like thickening of the subperitoneal tissue above described constitutes a most characteristic, almost pathognomonic sign, obtainable very early in the disease.

The coexistence of tubal tumor or tumors with these plaque-like thickenings renders the diagnosis of tuberculosis still more positive.

In the more advanced stages of peritoneal tuberculosis the

detection of "tubercular tumors" among the viscera of the abdominal cavity, forms an important aid in diagnosis.

In peritoneal tuberculosis with ascites the diagnosis is more difficult, and is based principally upon the history of the case and the indistinct outlines of the fluid collection.

NOTE.—Since writing the above the author has performed laparotomy upon two further cases: one of tubercular pyosalpinx with secondary tuberculosis of the peritoneum, and one of miliary tuberculosis of the peritoneum without involvement of the tubes; making a total up to date (December, 1891), of ten laparotomies upon eight patients. Neither case presented developments rendering necessary a modification of any statement contained in the paper.

## NOTES ON THE ETIOLOGY OF UTERINE ANTEFLEXIONS.

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IN recent studies of uterine anteflexions, the deductions have, to a great extent, been made from the condition as found in parous women, but little attention having been paid to the similar state in the unmarried and non-parous married.

I have long felt that the anatomical conditions existing during early life, together with certain vicious habits of body and dress, tend directly to produce the malformation under consideration, and have, therefore, made some special study of anteflexions as found in non-parous women.

If we limit the term *pathological anteflexions* to those cases in which marked inflammation of the adnexa and peritoneum exists all chance for argument is destroyed; but if, as I think we should, we apply the term to all those cases in which the flexion seems, or can be fairly demonstrated to be the primal cause of a condition of comparative invalidism, a much wider field will be covered, and a very important point in treatment—the straightening and support of the uterus—brought to the front.

As the result of clinical experience, I believe that a very large percentage of pathological anteflexions have their origin in early life, either before or soon after puberty; that this condition is a direct cause of an immense amount of suffering on the part of womankind; that it is the *first step* in a long list of congestive and even inflammatory conditions, not only

of the uterus, but of the tubes and ovaries; and that, eventuating, as it so frequently does, in sterility, it is a common cause of marital disappointment and infelicity. If such be the case, it is worthy of a careful consideration, and any step leading to its early recognition and prompt treatment can but lead to good results.

Before considering the causes which lead directly to the condition of ante flexion, a short review of the anatomy of the uterus and adnexa is necessary.

The normal position and attachments of the uterus seem to be most admirably adapted to the maintaining of a healthy condition of that organ, but there is evidently a presupposition that women will lead a natural and healthful existence; which, unfortunately, is not the case in this present age.

At birth the cervix is much more fully developed than the body of the uterus, constituting about two-thirds of the whole length of the organ, and with walls much thicker than those of the body. During early life the growth is slow, and "in a girl of ten or twelve years it scarcely differs in external appearance from that of a newborn child." At the approach of puberty the development of the body advances rapidly.<sup>1</sup>

The principal supports of the uterus are the ligaments. Those directly tending to maintain the antero-posterior position of the organ are the utero-sacral, round, and utero-vesical. The utero-sacral and utero-vesical have their uterine attachments at about the plane of the internal os, while the round ligaments are attached at the opposite extremities of the fundus. The utero-sacral contain a considerable amount of muscular tissue, and are strong preventives against the forward displacement of the lower end of the *body* of the uterus. The round ligaments have a structure similar to that of the utero-sacral, and, although not capable of forcing the fundus much further forward than its normal position without displacing the broad ligaments, they tend to prevent the backward displacement of the uterine fundus. A recognition of

<sup>1</sup> Garrigues: American System of Gynecology, vol. i. pp. 90, 92.

the fact that both these sets of ligaments contain muscular tissue is of value when we consider the question of treatment.

The utero-vesical ligaments, reduplications of the pelvic peritoneum, tend to maintain the normal relationship between the anterior surface of the uterine body and the posterior aspect of the bladder. From this we can see that the cervix is left hanging more or less free in the upper part of the vagina, not directly affected by change of position of the bladder, but having such an intimate relationship to the rectum that any considerable forward displacement of the anterior wall of the latter must needs correspondingly displace the cervix.

The blood supply of the uterus is derived principally from the uterine arteries which enter the uterus at a point below the internal os, form an intricate network through the substance of the uterus, running mostly between the fibres of the middle coat and anastomosing with branches of the ovarian artery. The return circulation is carried on principally by the uterine veins, which leave the uterus at the points of entrance of the uterine arteries.

Williams asserts that each horizontal segment of the uterus has, to a certain extent, an independent vascular supply; but Savage, in his explanation of Fig. 3, Plate X., *Female Pelvic Organs*, says: "The large superficial portion comprehends the veins forming the uterine venous plexus. It covers all the plexiform muscular cortex of the uterine body, and is covered by uterine musculo-serous platysma."

The uterine veins are thin walled and destitute of valves.

Although, on account of the anastomosis of the uterine and ovarian veins, each system tends to relieve any congestion occurring in the other, both would suffer from a shutting-off of a free flow in either, so that any obstruction to a free return flow through the uterine veins would necessarily cause more or less direct congestion of the ovarian veins.

As before mentioned, the relationship between the rectum and the cervix uteri is such that any material displacement



forward of the anterior wall of the former must correspondingly displace the latter, while, as may be fully demonstrated at almost any laparotomy, the lower coils of the small intestines lie in close contact with the posterior aspect of the uterine fundus, and any decided downward pressure exerted in the abdominal cavity tends directly to displace the body of the uterus forward.

The walls of the cervix being in early life thicker than those of the body of the uterus, and the supporting ligaments being attached above its line of union with the latter, admirably adapts it to maintain its normal position in case no direct force is applied to it; but in very many instances from earliest infancy there is a decided tendency to constipation, and even if this habit is overcome, it is, especially in the case of young girls, reëstablished during their early school years, and by their sedentary life it is made more pronounced, many a young girl in her teens, as well as those older, going for days at a time without a movement of the bowels. Although, in a normal condition, the rectum is empty most of the time, in these cases of extreme constipation it is almost constantly full of hard, scybalous masses. This pressure is exerted directly against the cervix, forcing it forward and naturally inducing a flexion below the attachment of the utero-sacral ligament or at the point of union of body and cervix—the internal os. This pressure is not a matter of short duration, but is exerted day after day, month after month, so that any further development of the uterus must be in accord with its influence.

The anterior wall at the point of flexion becomes atrophied and the posterior wall unusually long. The cervix takes the direction of the axis of the vaginal canal, and there is a marked tendency for it to become elongated.

The utero-sacral ligaments maintaining their tone the lower end of the uterine body is held in place, and healthy round and utero-vesical ligaments will keep the fundus forward. This constitutes a true cervical antelexion, and here

we have, what I believe to be, the *first step* in the *majority* of all uterine anteflexions, a condition in many instances, antedating puberty by months or even years. In early life the formation of the uterus is such as to bring about this result.

In those patients whom I have examined before or soon after the first appearance of menstruation, this condition is the one that has been almost universally found, and again, in none of those that I will call recent cases, has there been any evidence of inflammation of either the uterus or adnexa.

Did the change stop here, probably no special suffering would ensue, only more or less pain just preceding the appearance of each flow, which would be relieved when the cervical canal became pervious; but sedentary habits, often insufficient or innutritious food, the tendency to develop brain at the expense of body, cause a deterioration of the girl's health, and the tissues of the reproductive organs suffer with the rest.

Another element now comes into play. The flexion of the cervix forward shuts off, to a considerable extent, the return flow through the *uterine* veins and a condition of passive congestion of the body of the uterus is established. Granting that the arrangement of the bloodvessels in the uterus is such as to *tend* to relieve congestion of that organ when any one portion of the circulation is obstructed, the clinical fact remains that, in cases of sharp anteflexion, such congestion is not relieved. The uterine body, made heavier, sinks further forward, the endometrium becomes congested, the return circulation of the tubes and ovaries becomes involved, enlargement and prolapse of the latter organs being a not infrequent accompaniment of this condition. The before-mentioned condition of constipation, by blocking up the portal circulation, only tends to add to this general congestion.

This condition of cervico-corporeal anteflexion is the one most frequently met with in practice, the patient not generally applying for relief until forced to do so on account of physical suffering or prolonged sterility. Emmet says (*Principles and Practice of Gynecology*, p. 330): "All of these women"

all unmarried or sterile, "when first seen had, in addition to the flexion of the cervix, hypertrophy and more or less disease of the body, with some degree of flexion also above the vaginal juncture."

If, at this stage, the posterior ligaments become lax, the uterus drops lower in the pelvis and a state of prolapse begins, while relaxation of the anterior ligaments allows the fundus to fall backward, causing a true retroversion of the body, the rigidity of the anterior wall maintaining the condition of anterior flexion of the cervix and body upon each other, the cervix now pointing upward toward the bladder. Both these conditions bring about most aggravated vesical symptoms.

The pelvic circulation becoming more and more obstructed, the patient is often either reduced by a frequent hemorrhagic flow, or later, a condition bordering on amenorrhœa existing, the engorged vessels do not receive even the slight advantage of the normal periodical depletion.

In a vast majority of these cases, even at this advanced stage, no true *inflammation* of any of the pelvic tissues can be made out, but very great congestion is perfectly apparent. That these are the facts has been fully demonstrated to me by more than one laparotomy.

Another element which tends directly to bring about this result is the pernicious style of dressing young girls. The early application of tight-fitting corsets and the hanging of heavy skirts from the waist, can but tend to force the intestines down upon the body of the uterus, which, if lying forward, is carried still further in that direction, or if prolapsed, or to any degree retroverted, the malposition is increased.

The symptoms and downward progress of the patient, accompanying this condition, are only such as one would naturally expect. In the early stage of *cervical anteflexion*, on the first appearance of puberty or soon after it, pain in the uterine region for the first few hours of the flow, which is relieved as soon as the congestion of the cervix renders its

canal patent. "Thus we see, with flexions of the cervix, pain in the beginning of the flow is the rule and during the flow the exception."<sup>1</sup>

Later, pains, more or less constant, in the iliac and frequently in the lumbar region are augmented as the menstrual epoch approaches, and, at this time, accompanied by bearing-down pains. A sense of weight in the pelvis, throbbing of the vessels of the broad ligaments, and irritability of the bladder will be complained of, and the patient, unable to walk or stand with comfort, lives more and more of a sedentary life, appetite and digestion becoming more impaired, and an anæmic, nervous woman enters upon a life of invalidism. A cervical leucorrhœa is established, the endometrium becomes congested as do also the tubes, and with these conditions added to the flexion, if marriage takes place, sterility is very apt to be the result, together with a marked aggravation of the pathological condition and suffering.

Although I have purposely limited these investigations to anteflexions as found in non-parous women, I wish to say a word in regard to the same condition existing in women who have borne children. In a few cases in which I have examined patients both before and after their first pregnancy, I have found that the anteflexion existing before pregnancy returned after the birth of the child, although efforts were made to prevent it. More or less enlargement of the uterine body remained, the result of the subinvolution, induced, I believe, by the flexion shutting off a free venous circulation, and so perpetuating a state of congestion. The flexion of the heavy body forward is very marked. These cases are apt to go for years without reimpregnation occurring.

That inflammation in the ligaments may and does *cause* anterior displacements of the uterus, I do not for a moment question, but from clinical observation I do believe that *in the vast majority of cases* where, in non-parous women, the two

<sup>1</sup> Emmet: Principles and Practice of Gynecology, p. 319.

conditions, antelexion and inflammation, coexist, the flexion, with its consequent chronic congestion, antedated the inflammation, while in parous women the flexion is, in many instances, but a return to a condition existing before impregnation, only modified by the new pathological state.

The foregoing notes were based upon an analysis of three hundred and eighty-five consecutive cases taken from one set of my records. Among these cases, marked antelexion occurred in seventy-nine *non-parous* women, or over 20.5 per cent. of all the cases considered. Most of the women were unmarried, all had comfortable surroundings, and nearly all were examined for the first time by myself.

In one case the first appearance of suffering was coincident with a severe cold contracted four years after puberty, and another was apparently caused, or at least aggravated, by a fall. With these two exceptions no special cause could be found. Several of my patients were teachers, and so necessarily upon their feet much of the time.

Number of acute flexions selected (occurring in non-parous women) . . . . .	79
Single . . . . .	66
Married but sterile . . . . .	13
First appearance of menstruation previous to fifteenth year .	49
First appearance of menstruation subsequent to fifteenth year	23
Menstrual flow regular since its first appearance . . . . .	32
Menstrual flow irregular since its first appearance . . . . .	26
Menstrual flow regular, afterward becoming irregular . . . . .	7
Menstrual flow irregular, afterward becoming regular . . . . .	8
Menstrual flow normally free . . . . .	51
Menstrual flow scanty . . . . .	28
Dysmenorrhœa present . . . . .	70
Dysmenorrhœa absent . . . . .	6
Dysmenorrhœa had existed during whole of menstrual life . . .	56
Dysmenorrhœa had existed during latter part of menstrual life	8
Pain only before the flow began . . . . .	3
Pain only during the flow . . . . .	5
Pain before and during entire flow . . . . .	36
Pain before and during first half of flow . . . . .	22
Pain in lower abdomen (marked in iliac region) . . . . .	62
Pain in lumbar region . . . . .	47

Leucorrhœa noted as present (generally both cervical and vaginal) . . . . .	67
Irritation of the bladder noted . . . . .	54
Locomotion unaffected . . . . .	4
Locomotion impaired . . . . .	68
General health originally good . . . . .	55
General health originally poor . . . . .	11
General health impaired since puberty . . . . .	75
General health not materially affected . . . . .	2
Bowels reported as regular . . . . .	36
Bowels reported as constipated . . . . .	40
Marked tendency toward amenorrhœa . . . . .	27
Marked tendency toward menorrhagia . . . . .	8
Whole number of cases considered . . . . .	385

My records being made with no reference to analysis are, unfortunately, incomplete as regards detail, but they seem to indicate the following results. Compared with cases taken in rotation from these same records, the condition of anteflexion does not seem to materially affect the time of the first appearance of menstruation, but it does show that in connection with this condition there is a marked tendency to irregularity in the menstrual period and ultimately to a scanty discharge.

Dysmenorrhœa was present in 70 cases, with an absence of pain in only 6, and in 56 cases the pain had existed from the first appearance of menstruation, which would lead me to believe that *cervical* flexion existed at that time. In a case examined before her first flow this condition was found and relieved. (*Vide* Case I.)

In 58 cases pain existed both before and during a part or all of the flow, while it was complained of *before* the flow *alone* in only 3 cases, demonstrating how very rare it has been in my experience to meet with a case of pure cervical flexion. My cases have been almost universally true cervico-corporal anteflexions, together with more or less congestion of the endometrium, and often of the adjacent tissues. The few cases of simple cervical flexion were seen early and relieved before secondary changes had been established.

In 62 cases pain was felt in the lower abdomen, generally marked in one or both iliac regions, especially the left, and

47 cases, or a little over two-thirds of the whole number, complained of pain in the lumbar region, indicating involvement of or dragging upon the posterior ligaments.

Leucorrhœa, especially cervical, has been almost universally present, and irritation of the bladder *noted* in 54 cases. Locomotion has remained good in only 4 cases, while it was markedly impaired in 68, and the general health has been decidedly impaired since puberty in 75 out of the 79 cases reported. There was a marked tendency to amenorrhœa in 27 cases, while but 8 showed a tendency to menorrhagia, there being a tendency to an abnormally free flow during the early stages of the malposition only.

The pain just preceding the flow depends to a certain degree upon the fact that the flexion shuts off the canal, and so acts as an obstruction to the free egress of blood, but it is also caused by the increased distention of the already congested vessels. The latter accounts for those cases in which severe pains are felt a week or ten days before the appearance of the flow, and to a greater degree for the suffering in those cases where there is marked flexion of the body forward, with its accompanying endometritis.

My records concerning the condition of the bowels are not reliable, because many patients who reported that their bowels were regular have later acknowledged that they used cathartics with more or less regularity. I believe that the almost universal condition in these cases is one of chronic constipation.

The leucorrhœa, general pelvic discomfort, and impairment of locomotion are readily accounted for by the congested condition of the uterus and adjacent parts. The upturned cervix or heavy fundus pressing against, or, in the event of prolapsus or retroversion of the body, dragging upon the bladder, will inevitably produce irritation of that viscus.

The induced sedentary habits, impaired appetite and digestion, together with a very considerable amount of physical

suffering, can but result in very great impairment of the general health.

Sterility during the earlier stages of anteflexion is due to the fact that the displacement of the os externum forward and even upward toward the bladder, places it at a distance from the site where the semen is naturally deposited (*vide* Case IV.), while later the unhealthy state of the uterine canal and tubes but add to the obstructions against impregnation.

I will merely suggest the general principles of treatment that I endeavor to carry out. The course to be followed depends entirely upon the stage of the diseased condition, if we can so designate it, at which the patient comes under observation. If a recent case, generally the first step is to restore the uterus to its normal shape and position. Even if there is slight sensitiveness posterior to the uterus it will probably be more promptly relieved by correcting the flexion. A nearly straight, small Hodge pessary, or one of its modifications, will carry the cervix back into the posterior fornix without pressing unduly upon the utero-sacral ligaments, and at the same time its anterior bar serves as a support for the body of the uterus. This course should be accompanied by a thorough use of hot vaginal douches with the patient in a horizontal position.

In case the sensitiveness of the tissues, from congestion, is such as to preclude the immediate introduction of a pessary, the hot douches should be used together with the application of cotton pads, so arranged as to carry the cervix backward and keep the organ in as nearly as possible its normal shape and position. A pessary should be introduced as soon as the sensitiveness of the surrounding tissues has disappeared.

The local use of the faradice current will do much to induce a healthy development of the uterus and restore tone to the ligaments. A matter of the greatest importance is to build up the patient's general health.

The operation, devised by Dr. E. C. Dudley, of Chicago,



for straightening the cervical canal, has proved very useful in several of my cases.

Cases of elongated cervix and occlusion of the cervical canal must be treated as independent factors.

In brief, uterine antelexions frequently occur before or very soon after puberty, and are probably caused primarily by direct pressure against the cervix; the consequent partial occlusion of the uterine veins induces a congestion of the uterus and, secondarily, of the tubes, ovaries, and pelvic peritoneum. This condition generally precedes inflammation, and may exist for months or years without eventuating in the latter. The principle of treatment consists in restoring the pelvic circulation to its normal state and building up the general health of the patient.

CASE I.—Ada E., aged seventeen; general health good; bowels constipated. Applied for treatment on account of delayed menstruation but severe monthly pains in uterine region. Examination showed a sharp cervical flexion together with considerable congestion of the pelvic tissues. A small Hodge pessary was introduced and the patient put upon hot vaginal douches and applications. The flow appeared promptly and remained regular and painless while under observation, a term of several months.

CASE II.—Miss G., aged twenty-four; a teacher; first menstruated at the age of twelve. A free flow recurred regularly every four weeks and lasted, without pain, three days. Eight years before I first saw her she fell down stairs, striking upon the end of her spinal column, and since that time she had had severe pain, confining her to bed several days before and during the flow. The flow had recurred every three weeks but had been scanty in amount. Examination showed a marked cervicocorporeal antelexion of the uterus, the fundus freely movable but very sensitive to pressure, as were also the tissues at the sides of the uterus. A Peaslee's sound could be passed to the fundus with perfect ease. A No. 10 Hodge pessary was introduced to lift the cervix off the floor of the vagina and to sup-

port the heavy fundus and the patient put upon hot vaginal douches. One week later examination showed that the menstrual flow was present without the patient being aware of the fact. Since then the flow has recurred regularly and freely and has been accompanied by no pain, except on a few occasions when over-exertion or exposure to cold or wet could readily account for it. In this case, during the first few months of observation, I repeatedly removed the pessary, without the patient's knowledge, to satisfy myself what part it played in the relief of symptoms, and always had her return to me with complaints of the old discomfort. A pessary was worn for several years but was removed some two years ago and the relief has been permanent.

CASE III.—Alice G., first menstruated at the age of eleven; nine years before she applied to me for treatment. She was a younger sister of the young lady considered in Case II., and her menstrual flow had first appeared a few months previous to my being called to treat her elder sister. At that time she was a chubby, rosy-cheeked girl, but suffered terrible cramp-like pains before and at the beginning of her flow, which was excessive in amount and clotted. She then refused to accede to her parents' desire that she have treatment, but nine years later she appeared at my office, a thin, anæmic, nervous girl of twenty. In addition to the dysmenorrhœa, there was present cervical and some vaginal leucorrhœa, frequent micturition, impairment of locomotion, poor appetite and digestion, very obstinate constipation, and a marked lessening in the amount of menstrual flow.

Examination showed a sharp cervico-corporeal anteflexion with no marked tenderness in the pelvic tissues, but considerable congestion of the endometrium. The introduction of a small, straight Hodge pessary, together with hot vaginal douches and a few intra-vaginal applications, was followed by relief from all the symptoms, and when last seen the patient had regained her health and much of her lost flesh.

CASE IV.—Miss X. applied to me on account of a suppression of her menstruation. She had a very sharp cervico-corporeal anteflexion, but was pregnant. She acknowledged that she had allowed a very imperfect coitus to take place, she stooping for-

ward and supporting herself against the wall, the approach being made from behind. Probably owing in great part to the position suiting the conditions imposed by the malposition of the uterus, prompt impregnation was the result. I attended her in the confinement and she was carefully nursed, but in spite of all care the anteflexion returned after the birth of the child.







Yours for the fully  
George Barker

## IN MEMORIAM.

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### FORDYCE BARKER, M.D., LL.D.

BY JAMES R. CHADWICK, M.D.,  
*Boston.*

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OUR Society is called upon this year to lament the loss of three of its founders, foremost among whom in the interest he testified to this Society and in the affections of its Fellows is unquestionably its first president, the subject of this sketch.

Fordyce Barker, born at Wilton, Maine, on May 2, 1818, was the second son of Dr. John Barker, who served in the War of 1812, and Phœbe Abbott Barker. He died at his residence, 24 East Thirty-eighth Street, New York, on May 30, 1891, after several years of failing powers. His ancestor came to this country in 1640, and settled at Rowley, Massachusetts; the family subsequently moved to Maine, where Fordyce was born, while Maine was still a province of Massachusetts. He prepared for college under the tuition of the Rev. Charles Freeman, of Limerick, Maine, and entered Bowdoin College in 1833, graduating in 1837, in the same class as Governor John A. Andrew. One of his surviving classmates writes me that he was then "a kind, courteous, and gentlemanly person, and esteemed a jolly good fellow. During his college course he was not distinguished as a scholar, nor was he a great reader of books, nor did he manifest a fondness for literature or science for the love of them.

He appeared impatient of study, and the attainment of knowledge by the slow and laborious steps necessary to others he did not reach. His perceptions were quick, and his acquirements were made apparently intuitively and at a glance. His prevailing characteristic was his fondness for society." This picture of the youth will be recognized as fitting the grown man, but hardly presages the eminence among the great of the land to which he ultimately attained. I remember his coming to my house in Boston, *en route* to New York, on the night after he had entertained his classmates at dinner in Brunswick, Me., on June 24, 1887, on the fiftieth anniversary of their graduation. He told me that there had been twelve members present of sixty who had been connected with the class, and that twenty-two had been reported living, a truly remarkable longevity even for classes of that early date.

From 1838 to 1840 Fordyce Barker was studying medicine in Boston, in the office of Dr. Henry I. Bowditch, and in the U. S. Marine Hospital in the neighboring town of Chelsea with Dr. Charles H. Stedman, the first resident physician of that institution. An episode of those days, that manifests the unfailing kindness of Dr. Barker's heart, has been related to me by Dr. C. E. Stedman, a son of the above. One day, when Dr. Barker was witnessing the operations at the Massachusetts General Hospital, the surgeon operating did some specially cruel thing to a patient (this was before the days of anæsthesia). Dr. Barker, unable to retain his indignation, muttered "d—d old brute" loud enough to be heard by the operator. Whereupon the surgeon wrote a letter to Dr. Stedman, complaining of the base conduct of his student. The next day Dr. Stedman entered the Dispensary of the Hospital, where Barker was occupied, and said gravely, "Mister Barker, here is a letter demanding your serious consideration," handing him the note. He was confounded by the manner of his preceptor and by the signature of the letter; but, looking up to the retreating figure, he saw, as he said, "the laugh curling up behind the doctor's ears," and felt that



he was not to be severely punished. In fact he never heard of it again.

Barker was greatly endeared to Dr. Stedman by his high spirits and his musical tastes, so that a firm friendship was formed between master and pupil, which was actively maintained until the death of the former, in 1866.

In 1841 Dr. Barker took his medical degree at Bowdoin Medical College; immediately after which, having inherited a tendency to pulmonary disease, he established himself in Norwich, Conn., by the advice of Dr. Bowditch. His success in practice was immediate and phenomenal considering his youth, but his interests were not confined to his profession. During the Harrison campaign he engaged in politics and stumped the State in the interest of the Whig party, making a speech in a different town every night for three months, as I remember his telling me. When at Bowdoin he had been a member of the college band, and played several instruments. He had also a very sweet tenor voice, which led to his often singing in the church of Bishop Clark, now of Rhode Island, when the latter was rector in Boston. He also composed a number of melodies and a Fast-day anthem.

On September 14, 1844, Dr. Barker was married at Harrisburg, Pa., to Miss Elizabeth Lee Dwight, a native of Springfield, Mass., and on October 1st sailed with his young wife from New York for Havre, France, to carry out the plan formulated for him by Dr. Bowditch, of obtaining a degree from the Paris University.

During the following winter Dr. Barker attended the Paris hospitals most assiduously, incidentally winning the life-long friendships of many of his distinguished teachers, Barou Dubois, Trousseau, Sir Joseph Oliffe, Chomel, and others. While travelling in the summer of 1845, before he had been able to complete his examinations for a degree, he was suddenly summoned home by the illness of a near relative. He subsequently, however, received the degree through the friendly offices of Trousseau and his other friends in the

Faculty. His practice soon exceeded the limits of the town of Norwich, and his growing fame led him to be elected Professor of Obstetrics in the Bowdoin Medical College, which he held but one year, as the interruptions to his practice proved too disadvantageous. His address on "Some Forms of Disease of the Cervix Uteri," as President of the Connecticut Medical Society, delivered in May, 1848, attracted wide attention, and caused him to be invited soon after, by Prof. C. F. Gilman and Dr. Willard Parker, to enter the Faculty of the College of Physicians and Surgeons of New York. His removal to New York was, however, postponed until March, 1850; soon after which, together with Drs. Horace Green, Abraham L. Cox, and R. Ogden Doremus, he became one of the incorporators of the New York Medical College, located on East Thirteenth Street, filling the chair of obstetrics. It was while lecturing in this school that he strained his voice and ever after labored under the disadvantage of having only a hoarse whisper at his command, due to partial paralysis of one of the vocal cords. This misfortune would have turned any man of less determination from a public career, but he persevered in his lecturing and public speaking to the end of his life, always making himself heard, and causing his auditors to forget the imperfections of his voice by the charm of his eloquence and the purity of his diction.

In 1854 he was appointed Obstetric Physician to Bellevue Hospital; and in 1861, together with Drs. Isaac E. Taylor, James R. Wood, Lewis A. Sayre, George T. Elliott, Alexander A. Mott, and Benjamin McCready, all on the staff of the Bellevue Hospital, he obtained a charter for the "Bellevue Hospital Medical College," and invited Drs. Frank H. Hamilton, Austin Flint, Austin Flint, Jr., and R. Ogden Doremus, to join with them in the establishment of the college. In this Faculty Dr. Barker filled the chair of Obstetrics and Diseases of Women until his death, although for the past few years he had been unable to lecture, owing to physical weakness.

From his advent in New York Dr. Barker secured the confidence not only of the leading families but of his medical *confrères*, so that he was consulted by patients from all parts of the country. Though his fame was widest as an obstetrician, his knowledge in all branches of medicine was extensive and accurate, and he never ceased to practise as a general physician. He had a sanguine disposition, a genial manner, and impressive presence, so that he inspired confidence wherever he went. His intuitions were so quick and so sure, his capacity for acquiring knowledge without labor so great, his fertility of resource so unbounded, that he never failed to instil into his patient that most important of all therapeutic measures—*hope*. Wisdom he had to a higher degree than any man I ever knew; and common sense; and tact, which may be defined as “applied wisdom”—wisdom exercised in social life.

One of his numerous letters to me, which I have been re-perusing, recalls so striking an instance of his sagacity and ingenuity that I will venture to relate the case which called it forth. In 1879 I was consulted by a lady from New Bedford, aged thirty-three years, who had had a dead-born child four years before, and since that time four miscarriages. She was very anxious to have a living child. I found her to be perfectly healthy in every respect, except for a retroversion and a laceration of the perineum through the sphincter. I corrected the misplacement, and she immediately conceived, and miscarried again at the usual period. I then restored the perineum, and the same result followed. Finding no further morbid condition, and being at the end of my resources, I sent her to Dr. Barker for an opinion, which he rendered as follows: “I can find no local cause for her repeated miscarriages. The uterus is not atrophied, and there is very trivial displacement. My conviction is that the cause is to be sought in a constitutional perversion of nerve-force after conception—that is, that conception is not followed by increased activity of the generative functions, but by in-

creased activity of the nutritive and assimilative functions and marked increase of the arterial tension. What think you of this view?" The view struck me as fanciful, which I did not hesitate to express, with the freedom of intimacy, as follows: "Your conclusion was such as I expected from your genius and imagination." Acting upon his theory, however, he prescribed a strict milk diet and frequent bleedings (the woman was quite stout and florid) during the critical period. The treatment was strictly followed by me, with the result that she went to full term and was delivered of a living child. Acting upon the same theory, I have twice since succeeded in carrying women in similar conditions to full terms.

While Dr. Barker was deservedly trusted in all branches of medical practice, it was in the branch of obstetrics that he acquired the most fame and his most lasting work. He did not, however, enter into the domain of surgery, transferring to others all cases requiring the use of the knife. While a frequent contributor to current medical literature, his chief work was *The Puerperal Diseases*, first published in New York in January, 1874, which rapidly ran through many editions, and was translated into French, German, Italian, Spanish, and Russian. His clinical portrayals of these diseases in this volume will probably never be surpassed, though his views of the pathology and therapeutics have been already largely controverted by the phenomenal advances of the germ-theory of disease in the last few years.

Dr. Barker's many-sidedness caused him to be elected to many hospitals and societies. He was physician to Bellevue Hospital, and consulting physician to the Nursery and Child's Hospital, St. Elizabeth's Hospital, Cancer Hospital, and the Woman's Hospital. He was a member of the New York Academy of Medicine, of which he was president from 1879 to 1885, of the New York County Medical Society, of the New York Obstetrical Society, of the New York Pathological Society, of the New York Medical and Surgical Society, of the Medico-legal Society, of the

Medical Society of the State of New York, of which he was at one time president, and of the American Gynecological Society, of which he was the first president and had the unique distinction of reëlection to a second term. He was Honorary Fellow of the Royal Medical Society of Athens, of the Obstetrical Societies of London and Edinburgh, and of the British Medical Association. He was a member of the Obstetrical Societies of Philadelphia and Louisville, Ky., of the College of Physicians of Philadelphia, and of the Medical Society of London. Outside of medicine he was a member of the American Geographical and Statistical Society in New York, of the Academy of Design, of the American Bible Society, of the New York Historical Society, and of the Century and other Clubs. He was a communicant of St. Thomas's Church (Episcopal), New York City. He received many honorary titles: on June 20, 1878, the degree of LL.D. from Columbia College; on April 17, 1884, LL.D. from the University of Edinburgh at its tercentenary celebration; on June 24, 1887, LL.D. from Bowdoin College, on the fiftieth anniversary of his graduation; on August 10, 1888, LL.D. from Glasgow University. He was invited to attend the seven hundred and fiftieth anniversary of the University of Bologna to receive a fifth LL.D. in 1888, but was unable to avail himself of the invitation.

This Society will not need to be reminded how unanimous was his election to be our first president, and how pointedly we expressed our appreciation of his wise and conciliatory conduct in office by reëlecting him to a second term. I may tell you what you may have only surmised, that the very existence of the Society is largely due to the enthusiastic manner in which he received my first proposition for its foundation; and the success which attended its early and critical years was mainly attributable to his sagacity and knowledge of men. Every step in our early career was subjected to a rigid criticism in his library, and the ultimate policy modelled upon the principles that he laid down.

These early conferences cemented a close intimacy, despite the disparity of our ages, which endured unabated in fervor to the end of his life. For fifteen years his house has been my home in New York, in which, whether bidden or unbidden, I have invariably been welcomed by his cordial smile and eager handshake, and by the grace and sweetness of his accomplished wife. As one of his many friends, I cannot let pass this opportunity of testifying to his many kindly offices, to his warmth of heart, and to his sacrifice of self for those of whom he was fond. Last, but by no means least in the enumeration of the qualities which made him a power in the land, was the exuberance of his social nature. He never seemed so happy or so brilliant as when extending to his professional brethren and to the medical and literary celebrities from abroad the hospitalities of his princely mansion. His annual trips to Europe, extending over a period of more than thirty years, made him a prominent figure in the social life of Europe; he was on terms of intimacy with Dickens, Thackeray, and other literary celebrities; the hospitalities then received were repaid when any of his hosts visited this country. His receptions given to Sir Spencer Wells, Dr. Oliver Wendell Holmes, to the American Gynecological Society, will long be remembered among the brilliant events of New York life during the last half-century. Lord Houghton, Lord Dunraven, Sir Lyon Playfair, the Princess Henriette, Geheimrath von Esmarch, and many others partook of his royal hospitality.

We all of us feel that we have lost our best friend, that our Society has lost its most enthusiastic Fellow, its most lucid debater; that the profession of New York has lost its most conspicuous and best-loved member.







## DAVID HUMPHREYS STORER, M.D., LL.D.

BY WILLIAM L. RICHARDSON, M.D.,  
*Boston.*

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DR. D. HUMPHREYS STORER, one of the founders of the American Gynecological Society and one of its vice-presidents in 1879, died at Boston, September 10, 1891, being at the time of his death in his eighty-eighth year.

Dr. Storer was the son of Judge Woodbury Storer, the Chief Justice of the Court of Common Pleas at Portland, Maine, and was born in that city March 26, 1804. He graduated from Bowdoin College at the early age of eighteen, being the third scholar in the class of 1822. In 1876 he received the degree of LL.D. from his alma mater. He studied medicine with Dr. John C. Warren, of Boston, receiving the degree of Doctor of Medicine from the Harvard Medical School in 1825. In connection with Drs. Edward Reynolds, Jacob Bigelow, and Oliver Wendell Holmes, he established the Tremont Street Medical School, which was the first attempt to systematize medical education in this country. This movement greatly contributed to the development of the present Harvard Medical School. In 1829 he joined the Massachusetts Medical Society, of which he was the oldest Fellow at the time of his death. It was before this society that, in 1851, he delivered the annual discourse, taking as his subject "Medical Jurisprudence." In 1854 he was chosen Professor of Obstetrics and Medical Jurisprudence in the Harvard Medical School, which office he held for thirteen years, during nine of which he was the dean of the medical faculty. From 1849 to 1858 he was one of the visiting physicians of the Massachusetts General Hospital.

From 1859 to the time of his death he was a member of the consulting staff of that Hospital.

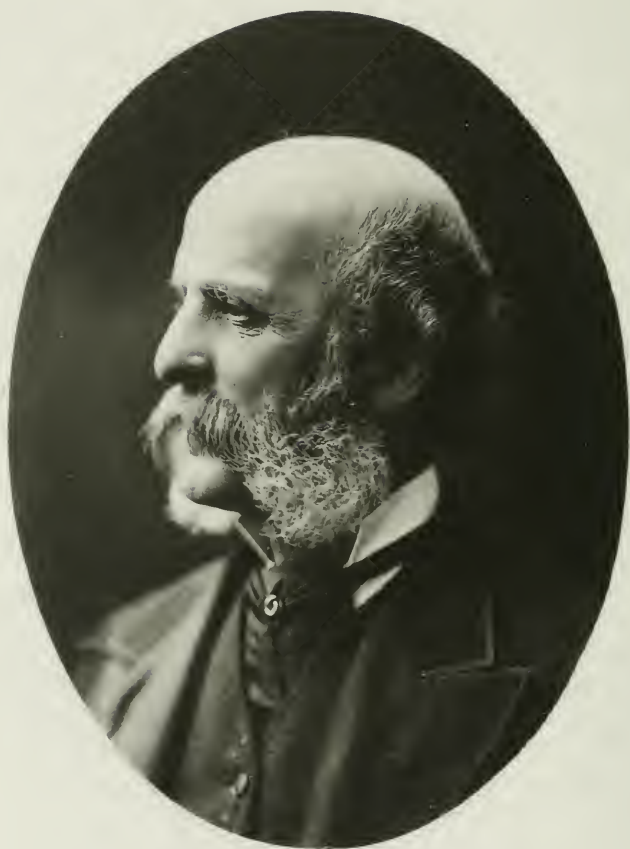
He was one of the founders of the Boston Society of Natural History and was for many years one of its vice-presidents. In 1837 he was appointed by the State of Massachusetts to write, in connection with a State survey which was then being made, a report on the fishes and reptiles of the State. In 1845 he published a synopsis of the fishes of North America, and later an elaborate work on the fishes of Massachusetts.

He was one of the ardent supporters of the American Medical Association, holding at one time the office of president. He was one of the Fellows of the American Academy of Arts and Sciences, and a corresponding member of a large number of medical and scientific societies in this country and in Europe. The interest which he displayed in the numerous local medical societies of Boston of which he was a member will long be remembered by his associates.

As a physician, Dr. Storer was ever welcomed in the sick-room, where his firm but kind and sympathetic manner always inspired confidence. As a friend his love of genial companionship and earnest interest in the welfare of others made him a universal favorite. As a teacher he was clear and enthusiastic, and his lectures at the Medical School were among the most popular. His kindness to the younger members of the profession peculiarly fitted him for the office of dean. His cordial welcome and fatherly advice will long be remembered by those who went to him with problems perplexing them at the threshold of their professional career. As a speaker he was logical and the words used could not be misunderstood. Truthful and scrupulously honest himself, he hated all hypocrisy, shams, and deceit, and never failed to speak out against what did not seem to him to be right.

He was beloved by his patients, respected by his professional brethren, and sincerely mourned by a large circle of friends, both old and young. His death has removed from the profession one of its leading members.





G. H. Lyman

## GEORGE HINCKLEY LYMAN, M.D.

BY C. ELLERY STEDMAN, M.D.,  
*Boston.*

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GEORGE HINCKLEY LYMAN was born in Northampton, July 17, 1819, the son of Jonathan Huntington and Sophia (Hinckley) Lyman. He was educated in the Round Hill School in Northampton, and was then obliged to pass several years in Ohio and other Western States, on account of his health, before beginning his professional studies in Philadelphia. He took his medical degree at the University of Pennsylvania in 1843, served as interne at Blockley Hospital, and passed nearly two years in medical studies in Paris, returning to Boston in 1845. He married, first, October 14, 1846, Maria Cornelia Ritchie, daughter of James T. Austin; she died in 1864, leaving two sons and two daughters; he married, second, February 13, 1879, Henrietta, daughter of Samuel T. Dana, who survives him.

He began practice in Boston on his return from Europe, and while enduring the tedious waiting for patients which is the lot of young doctors busied himself in study and writing. Patients, however, were not long in coming to one so well equipped for his work, and although Dr. Lyman's *clientèle* was never large, owing to his four years' absence in the army, it was of the most satisfactory kind. It is not improbable that he was disappointed in finding that his professional line was likely to be the physician's rather than the surgeon's, for he had fitted himself especially for surgical work. But surgery in Boston was at that time in the hands of a few men, who did not look favorably on new aspirants.

His first paper was on "Non-malignant Diseases of the Uterus," and won the Boylston Prize for 1854. His second contribution to medical literature was an essay which gained the prize offered by the Massachusetts Medical Society for a "Dissertation on the History and Statistics of Ovariectomy, and under what Circumstances the Operation may be regarded as Safe and Expedient." This was in 1856, when ovariectomy was yet looked on with no little distrust and even with dread. By its painstaking research and well-argued positions, the essay contributed in a signal manner to a consideration of the operation more serious and more favorable than it had yet gained. A list of his writings is appended to this notice; among them, besides those here named, is one on "A. Case of Embolism of the External Iliac, followed by Gangrene, Loss of Leg, and Recovery," which has an interest in connection with his last illness.

When the war of secession broke out, Dr. Lyman was one of the first to offer his services to Governor Andrew in response to his call for volunteers in April, 1861. He coöperated with Dr. William J. Dale in organizing the State Medical Bureau. Dr. Lyman's work was here of high importance, system having to be evolved out of disorder, and discipline to be enforced on people who were surprised to learn, for the first time, of the duty called obedience. Dr. Dale says in a letter to Adjutant-General Schorder: "Whatever of success attended the preparation of the troops prior to my commission is attributable to Dr. Lyman, who showed great energy and good judgment, and was constantly in consultation with the Governor." Dr. L. V. Bell, Dr. Henry Bryant, and Dr. Lyman were the first candidates to appear before the Medical Examining Board in Washington. His name was reported at the head of the list, which gave him rank over all civil appointments in the medical service during the war. On September 7th, he was assigned Medical Director of Gen. Fitz John Porter's entire division. On the march to Yorktown, where his duties were arduous, Dr. Lyman con-

tracted a severe dysentery, which seriously disabled him at the time, and in the form of chronic diarrhœa continued to annoy him for years after the war. After the retreat from Yorktown, Dr. Lyman became Medical Director of the Fifth Corps when Gen. Porter took command of it. On June 27th, the whole corps of twenty-six thousand men received the attack of double its number at Gaines's Mill from noon till dark, when it was withdrawn across the river. At Gaines's Mill two hospitals were established. In full operation until the fight was nearly over, the heavy fire rendered these at last untenable. A part of the surgeons were captured as they left one door, while the rest escaped from the other. The fatigues and exposure of the surgeons busied about the work after these battles were exceedingly great, and in Dr. Lyman's case terminated in such complete collapse as to make rest imperative. Fortunately for him, the opportunity was afforded by a recent law adding to the regular army eight medical inspectors with the rank of lieutenant-colonel, four from the old army surgeons and four from civil life. Assuming the duties of the new rank, he was ordered to inspect the hospitals in Baltimore, Philadelphia, New York, and Washington. Thence, with headquarters at Louisville, he had monthly to inspect and report on medical work in Kentucky, Tennessee, West Virginia, Ohio, Mound City, and as far south "as our lines may extend." In December he found in Nashville the churches, many houses, and warehouses overflowing with wounded. In such duty Dr. Lyman continued till he was transferred to the Department of the East to inspect New England, New York, and New Jersey. Extra duty of inquiry into alleged abuses in the large hospitals at the East gave him in the department three thousand five hundred miles of railway travel. In December, 1864, Dr. Lyman was ordered to the Department of the South for inspection of hospitals and to await arrival of Gen. Sherman's army at the sea, and report on its sanitary condition. He

remained in this department until he resigned in November, 1865.

On leaving off his uniform, Dr. Lyman returned to Boston, where private practice soon claimed almost all his time. During the war a hospital for the city of Boston, the need of which had been talked about for years, was planned, built, and opened in 1864. Dr. Lyman was consulted in its rise and progress, and on its completion was offered the post of visiting surgeon, but he did not clearly see his way to undertake the arduous work which the appointment would bring. But in 1871, on being made visiting physician, he assumed that position and filled it with energy and devotion; he was particularly interested in its gynecological work, and never tired in studying and treating, with sedulous attention, the class of cases which form so interesting a department of hospital experience. In all the affairs of the hospital his judgment was sought and followed, and his interest in all that concerned its administration and its usefulness never abated.

In 1879 he was elected president of the Massachusetts Medical Society, and brought to its varied and far-reaching work the same zeal and thoroughness which characterized his hospital service. He was a good presiding officer, ruling strongly, with impartiality and coolness. Before this, in 1870, he acted as anniversary chairman, and in 1875 he had pronounced the oration, his subject being "The Interests of the Public and the Medical Profession." This topic he handled in a broad and vigorous manner, having the courage of his convictions in no feeble degree. He did not believe in women practising as physicians, and was not at all afraid to say so, fortifying his positions with arguments well considered for that time. He was not given to yielding any opinion which he had thoughtfully adopted, and the writer does not know that he materially modified his views of that question, as increased experience has led most of us to do. The address was characterized by good sense, and its recommendations of legislation in medical matters were important.



It brought him, besides the applause of the society, many letters of congratulation from the best-known men of the profession.

Veterans of the war are prone to weary a younger generation with their reminiscences, as Thackeray says the Peninsular and Waterloo veterans did in his day. The writer thinks, however, that he is not mistaken in considering that the most valuable and most readable of his writings is a paper which he presented to the Military Historical Society of Massachusetts, on "Some Aspects of the Medical Service in the Armies of the United States During the War of the Rebellion." The subject gave him opportunity of greater freedom in style, and allowed some play of the humor which helped to make his company so agreeable to those who saw most of him, no trace of which was permitted to appear in his scientific writings. A study of this paper, in the event of another war, would be of inestimable aid to the organization of a large surgical service the very foundation of which may have to be laid in the midst of alarm and confusion.

Dr. Lyman was one of the founders of the American Gynecological Society, and among his public associations he belonged to the Obstetrical Society of Boston, with which he seldom failed to meet, and where his voice was frequently and respectfully listened to; the Boston Society for Medical Improvement; the Suffolk District Medical Society; the Military Historical Society of Massachusetts; and the Military Order of the Loyal Legion of the United States. He was an Honorary Member of the Harvard Medical School Association, and for many years he was vestryman of St. Paul's Church.

Dr. Lyman went abroad in the spring of 1890; passed the winter in good health in Dresden, Florence, Rome, and Venice, the early summer of 1891 in Switzerland and Paris. On his way home he was suddenly seized with facial erysipelas, of which he had survived four previous attacks at long intervals. The disease had cost him the sight of an eye ten years before by sequence of an orbital abscess. This attack

abolished the sight of the remaining eye, and an embolism of the femoral artery occurred before he succumbed, on August 19th and the tenth day of his illness. His friend Dr. Priestley, and subsequently Dr. William Ord, and his son Dr. William Ord, Jr., were unremitting in their attendance at his bedside. He was buried at Mount Auburn, September 21, 1891.

Dr. Lyman's presence was singularly fine, his physical strength was great, his step was active, his manner alert. He was proud and sensitive, and very decided in all his views. His absorption in his duty made him sometimes abrupt. He could put up with no disobedience, delay, neglect, or inaccuracy, and thought everyone was as young and energetic as himself. He was a loyal friend, and his love for his profession, instead of diminishing with advancing years, ripened into an enthusiasm which younger men could not always attain to. If he took little pains to conciliate those whom he disliked, yet an unjust attack on a brother physician, even on one whom he did not esteem, would rouse his keenest indignation. His mental activity led him to read almost every new medical book in the English tongue, and very much of current general literature.

This love for his profession, his earnestness and thoroughness, his large sense of honor, and his exalted and unselfish patriotism are denied by none who knew him, and are a model for all young men, for all soldiers, and for his countrymen.

*Papers, etc., by Dr. Lyman.*

"Non-malignant Diseases of the Uterus." An essay which obtained the Boylston prize for 1854. 8vo. pp. 76.

"The History and Statistics of Ovariectomy, and the Circumstances under which the Operation may be Regarded as Safe and Expedient." Pp. 146. Prize essay: Massachusetts Medical Society Publications, vol. i. No. 1. Boston, 1856.

"The Interests of the Public and the Medical Profession." The Annual Discourse before the Massachusetts Medical So-

ciety. 8vo. pp. 46. Boston, 1875. Medical Communications Massachusetts Medical Society, vol. xii. No. 1.

"In Memoriam: Charles Edward Buckingham." Transactions American Gynecological Society, vol. ii. Pp. 3. 1878.

"A Case of Embolism of the External Iliac, Followed by Gangrene, Loss of Leg Below the Knee, and Recovery." Boston Medical and Surgical Journal, N. S., vol. iii. pp. 3-8. May 20, 1869.

"Pelvic Effusions and the Importance of their Early Recognition with Reference to Treatment." Read before the Obstetrical Society of Boston. Boston Medical and Surgical Journal, 1882.

"Notes on Cases of Pelvic Effusions Resulting in Abscess." Transactions American Gynecological Society, vol. vi. pp. 90-133. Boston, 1882.

"Synopsis of Gynecological Cases Treated in the Boston City Hospital for Five Years preceding January 1, 1881." Medical and Surgical Reports, Boston City Hospital, third series. Pp. 20. 1882.

"Tinnitus Aurium and Vertigo as Prominent Symptoms of Lithæmia." Journal of the American Medical Association, December 20, 1883. Pp. 16.

"Historical Sketch of its Members in the War of the Rebellion." An address to the Obstetrical Society of Boston. Pp. 62. Printed by the Society, 1887.

"Some Aspects of the Medical Service in the Armies of the United States during the War of the Rebellion." By George H. Lyman, late Lieutenant-Colonel and Medical Inspector of the United States Army. Read before the Military Historical Society of Massachusetts, May 13, 1890. Pp. 40. Boston, 1891.



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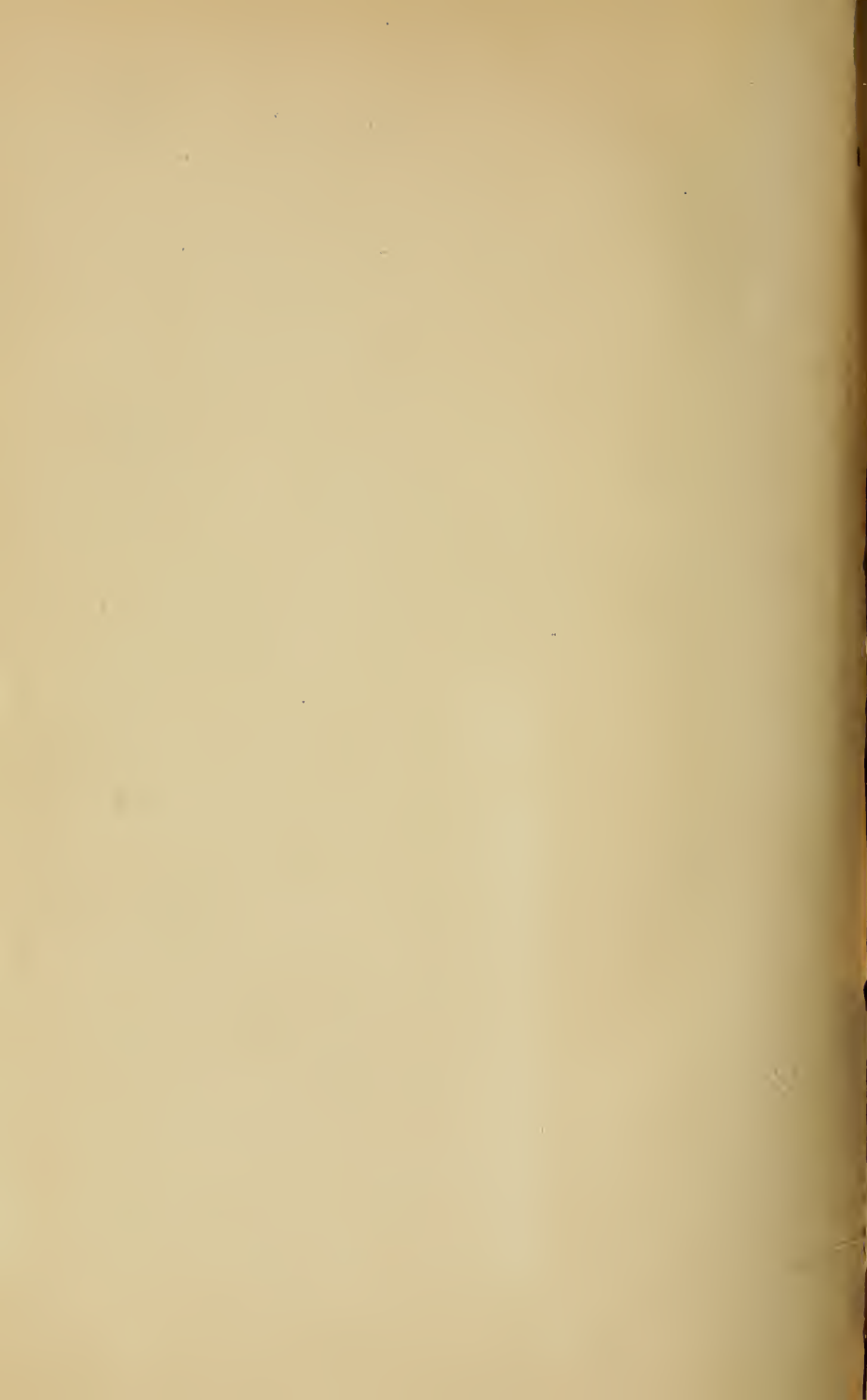
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